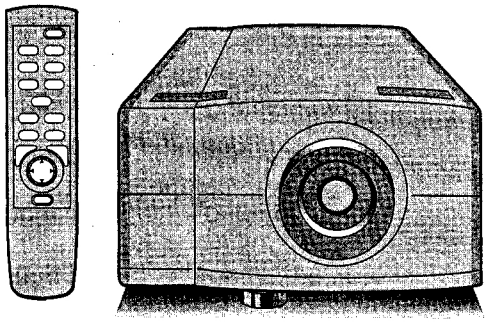
JVC

SERVICE MANUAL

LCD DATA PROJECTOR

LX-D700U/E/EK



Specifications

Optical System

LCD panel	1.3-inch × 3 (800 × 600 pixels) No. of effective pixels: 480,000 Validity rate of more than 99.998% (Pixels with constant light-up and shade of less than 0.002% LCD pixel defect can occur.)
Projection lens	1.3X manual focus f=45mm - 59mm F=2.5 - 2.9
Screen size	Min. 23 inches Max. 300 inches (diagonal length : 51 cm - 762 cm) Aspect ratio: 4 : 3
Optical output (average)	750 ANSI lumen
Illumination lamp	UHE lamp (illuminated with 150W DC)

Electric System

Video input signal	(COMPUTER IN) Analog RGB R : 0.7Vp-p/75Ω G : 0.7Vp-p/75Ω B : 0.7Vp-p/75Ω Sync signal: separate/composite/ sync-on-green automatic switching TTL level (positive/negative) (AV-IN) S-Video/Composite video (1.0V p-p)
Video output signal	(COMPUTER OUT) analog RGB R : 0.7Vp-p/75Ω G : 0.7Vp-p/75Ω B : 0.7Vp-p/75Ω Sync signal: separate/composite TTL level (positive/negative)
Audio input signal	(AUDIO-1, 2) 500mVrms/47 kΩ (AV-IN) 500mVrms/47 kΩ
Audio output signal	(COMPUTER 1, 2/S-Video/composite video) 0 - 500mV rms
Input terminals	(COMPUTER IN) D-Sub 15-pin (female) × 2 (AUDIO 1,2) 3.5mm dia. stereo mini-jack × 2 (AV-IN) S terminal (mini-DIN 4-pin) × 1 RCA jack × 2 (VIDEO L/R) RCA jack × 2
Output terminals	(COMPUTER OUT) D-Sub 15-pin (female) × 1 (AUDIO OUT) 3.5mm dia. stereo mini-jack × 1
Built-in speakers	2W × 2 (stereo)
Remote control input terminal	3.5mm dia. stereo mini-jack × 1
Mouse input/output terminal	(MOUSE/COM 1, 2) DIN 13-pin

Other

Power requirements	AC100 - 120V, 50/60Hz (LX-D700U) AC200 - 240V, 50/60Hz (LX-D700E/EK)
Power consumption	240W (28W on standby)
Allowable operating temperature	5° - 40°C (20% - 80%) with no condensation
Allowable storage temperature	–10° - 60°C (10% - 90%) with no condensation
External dimensions (excl. lens)	9.9"/248 mm (W) × 13.4"/340 mm (D) × 6.7"/169 mm (H)
Mass	14.8 lbs/6.7 kg

Accessories

- Remote control
- Power cord
- Lens cap
- Personal computer connecting cable
- Mac 13 converter
- Mac 16 converter
- Mac 19 converter
- Mouse cable for MAC
- Mouse cable for IBM PC/AT compatible PC
- Personal computer audio cable
- AV cable
- AA battery × 2
- Instruction manual

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Parts List

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded(▒) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

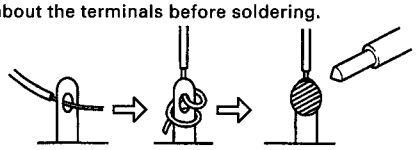


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

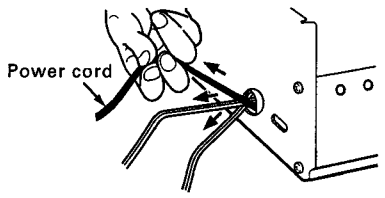


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing those products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuit. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector. by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

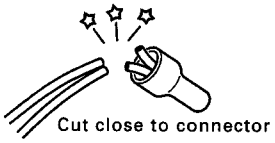


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are standed, twist the stands to avoid frayed conductors.

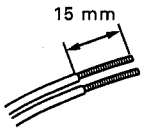


Fig. 4

(3) Align the lengths of the wires to connected. Insert the wires fully into the connector.

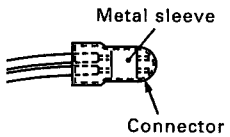


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

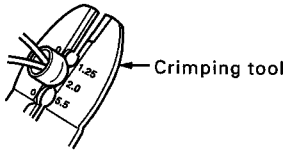


Fig. 6

(5) Check the four points noted in Fig. 7.

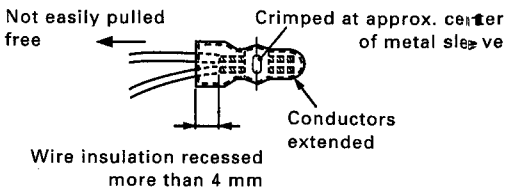

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

●Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 bellow.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 bellow.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

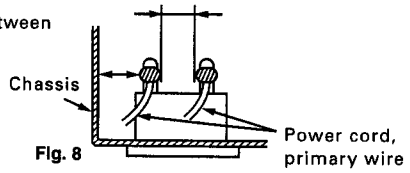


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert lord Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of lord Z. See figure 9 and following table 2.

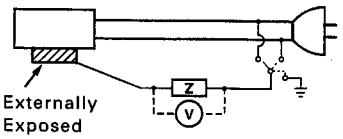


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method :

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

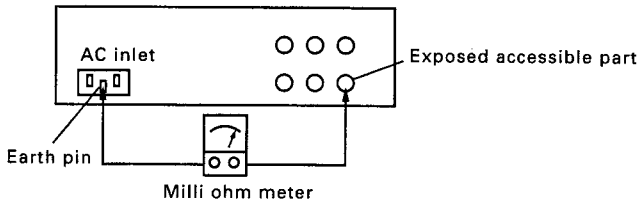


Fig. 10

Grounding Specifications

Region	Grounding Impedance (z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100V	Japan	R ≧ 1 MΩ /500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 1 MΩ /500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Lord Z	Leakage Current (i)	a, b, c
100 V	Japan	1kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15μF, 1.5kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current Specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Safety Cautions

Please observe the following cautions during service and inspection. The cabinet is to opened only by qualified service personnel.

⚠ Warning **Indicates contents which, if ignored, can lead to serious injury or death.**

Pictorial display	Contents	Location
1) High illuminance caution	When the illumination lamp is on, do not look directly into the lens, even from a distance, because this can lead to eye injury.	Top cover
2) High temperature and explosion caution	Temperature and voltage are high when the illumination lamp is on, so there is danger of burn or explosion.	Bottom chassis
3) High voltage caution	There are many high voltage parts inside. Touching any of these could result in electrical shock.	Bottom chassis

* Always observe the caution items and specification items included in this instruction manual.
* Always disconnect the power plug from the outlet before replacing the lamp.
* Do not touch the exhaust fan or the safety switch terminal when the outer cover has been removed and the power turned on for adjustment purposes.
* Work on a level, stable surface to prevent the dropping of equipment and parts.
* Use the accessory power cable and interface cable provided.

1. FIELD SERVICE

(1) Basically, the components configuring this projector are handled as single parts. Consequently, replace PWBs and components during field service.
The following shows the method used to repair the main components.

Part name	Repair method	Part name	Repair method
Optical engine	Repair	Filter board assembly A	Replace
Main board assembly	Replace/repair	C. Board cable Assembly	Replace
Audio board assembly	Replace	Operation unit	Replace
Power supply block	Replace	Receptor board assembly A	Replace
Remote board assembly	Replace	Receptor board assembly B	Replace
AC cable assembly	Replace	—	—

Cautions:

* **"Repair" indicates parts that are to be repaired at the factory and "replace" indicates parts that are to be replaced in the field.**
* **The driver board assembly is part of the optical engine and cannot be separated.**
* **Discard replaced parts and defective PWBs. Defective PWBs need not be returned to the factory.**
* **Only parts for which repair is indicated are repaired at the factory.**
* **When in the field, send only the parts to be repaired to the factory using the specified method and indicate the defective parts. It is recommended that parts for which repair requires considerable time should be prepared beforehand.**

(2) Repairs require approximately four weeks to complete.

Caution:
When the driver board assembly requires repair, please request repair of the optical block which is part of the optical engine. Factory repair is not possible if only the driver board assembly is sent.

(3) Shipping Method

1. When shipping an optical engine, please refer to the "Optical Engine Shipping Carton" item.
2. When shipping a main board assembly, use an anti-static-electricity treated vinyl bag and pack in such a way that no stress is applied to the board. The vinyl bag included with the optical engine shipping carton can be used.

(4) When factory repair is required

Only the Optical Engine (Driver Board) and Main Board Ass y can be repaired at the factory. In such case, use the following procedure to fill in the necessary items in Parts Repair Order Form of LX-D500, LX-D700", attach this to the part to be repaired and ship to the factory repair agent.

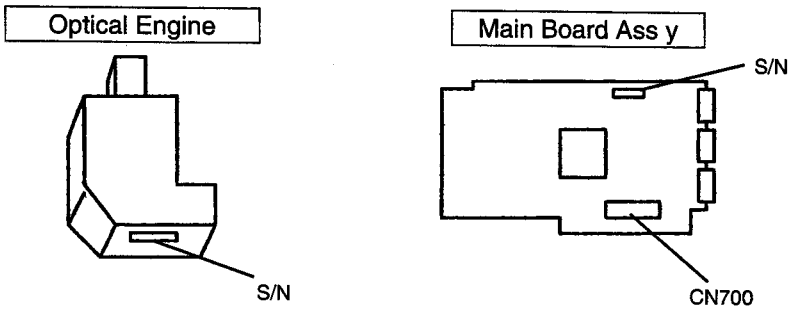
Repair Request Procedure:

① Fill in the necessary items in Parts Repair Order Form of LX-D500, LX-D700."

- From:
- Manager, Originator, Date
- Part S/N
- Failure : Describe as clearly as possible, including:
  The type of device connected to
  The screen display at failure
  Symptoms, etc.

② Attach Parts Repair Order Form of LX-D500, LX-D700" to the part to be repaired and ship.

③ The serial numbers of the Optical Engine and Main Board Ass y can be found in the following locations.



Caution:

Parts Repair Order Form of LX-D500, LX-D700" is used to control repair parts at the factory; therefore, repair parts will not be accepted if Parts Repair Order Form of LX-D500, LX-D700" is not attached because of the danger of confusion or loss.

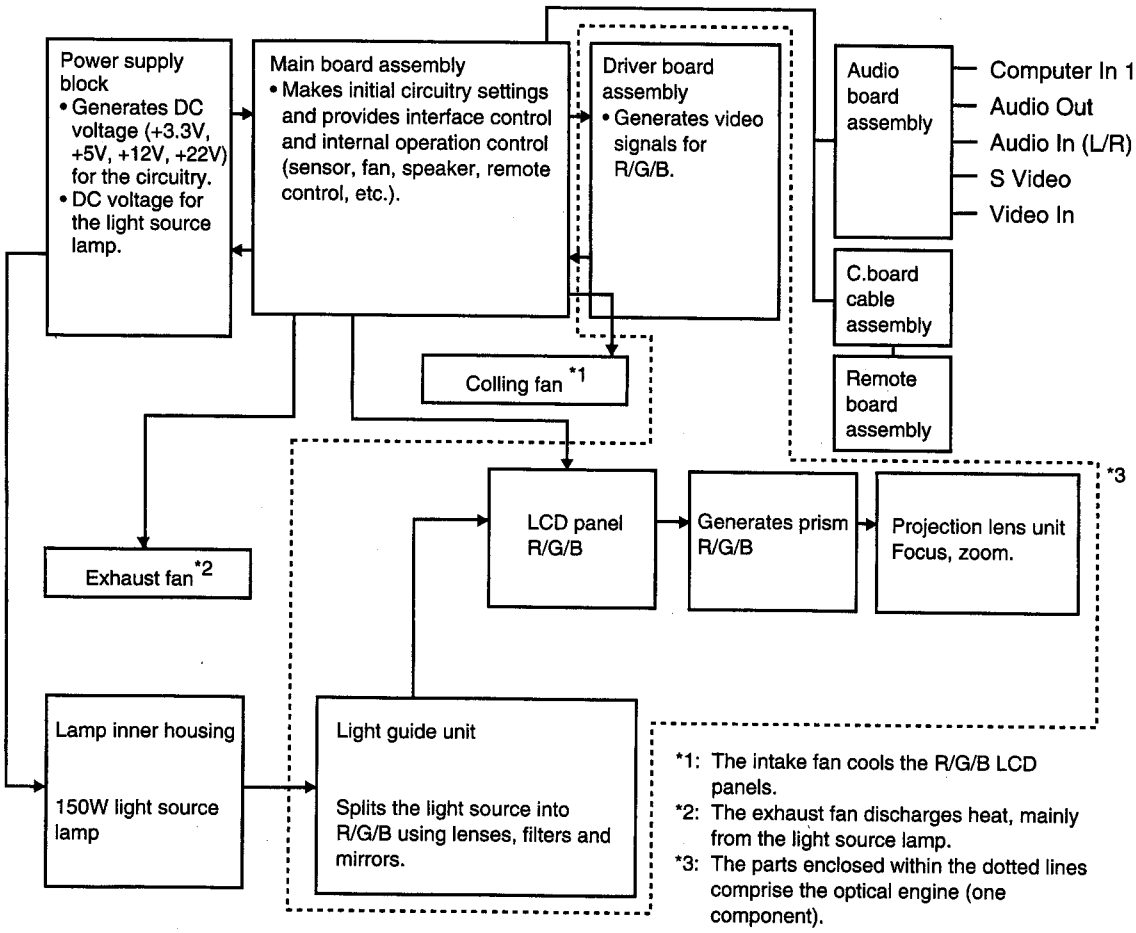
PARTS REPAIR ORDER FORM OF LX-D500, D700

TO :	Service Engineering Group Quality Assurance Dept. Projection System Dept. Victor Company Of Japan, Limited Yamato Plant 1644, Shimotsuruma, Yamato, Kanagawa 242, Japan	Tel: 0462-78-1843 Fax: 0462-78-1850	
FROM :		Manager	
		Originator	
		Date	
		Sheet NO.	
Part	Optical Engine with Driver Board		
	☐ (LX-D500) BHNE1035818 S/N:		
	☐ (LX-D700) BHNE1038890 S/N:		
	Main Board Assíy		
	☐ (LX-D500) BHNE3002323 S/N:	☐ BHNE3002323-1 S/N:	
	☐ (LX-D700) BHNE3003178 S/N:		
Failure description			
Packing attention	1 A exhaust-fan and a lamp should be detached from an optical engine, but leave a driver board assy on it's optical engine. 2 The driver board assy and it's optical engine are always the combination of the couple. When the driver board assy is sent to PSD, it is necessary to send the driver board with it's optical engine and viceversa. 3 It is preferable to put the optical engine in a special commuting cartonbox--the parts NO. are listed on service manual--furthermore pack it in a larger cartonbox. 4 It must be sure to ptovide proper packing so that no electrostatic and shipping destruction occurs. 5 Repairable parts are only optical engine and main boardassy, other parts are consumption. 6 Issueing of this parts repair order form should be one sheet every part. 7 Repair charge consists of parts-cost, labor-charge and sundry-expenses that varies in contents. 8 About 4 weeks delivery date for repair in Japan is required, however when it meet consecutive holidays of the factory these days might be exceeded.		

JVC/PSD

2. HARDWARE CONFIGURATION

The hardware is classified into two groups: the optical system and the circuitry. The diagram below shows the hardware configuration blocks and summaries of the functions.


Power supply block
• Generates DC voltage (+3.3V, +5V, +12V, +22V) for the circuitry.
• DC voltage for the light source lamp.
Main board assembly
• Makes initial circuitry settings and provides interface control and internal operation control (sensor, fan, speaker, remote control, etc.).
Driver board assembly
• Generates video signals for R/G/B.
Audio board assembly
Computer In 1/2
Audio Out
Audio In (L/R)
S Video
Video In
C.board cable assembly
Remote board assembly
Colling fan *1
Exhaust fan *2
LCD panel R/G/B
Generates prism R/G/B
Projection lens unit Focus, zoom.
*3
Lamp inner housing
150W light source lamp
Light guide unit
Splits the light source into R/G/B using lenses, filters and mirrors.
*1: The intake fan cools the R/G/B LCD panels.
*2: The exhaust fan discharges heat, mainly from the light source lamp.
*3: The parts enclosed within the dotted lines comprise the optical engine (one component).

2-1. Display Operation Overview

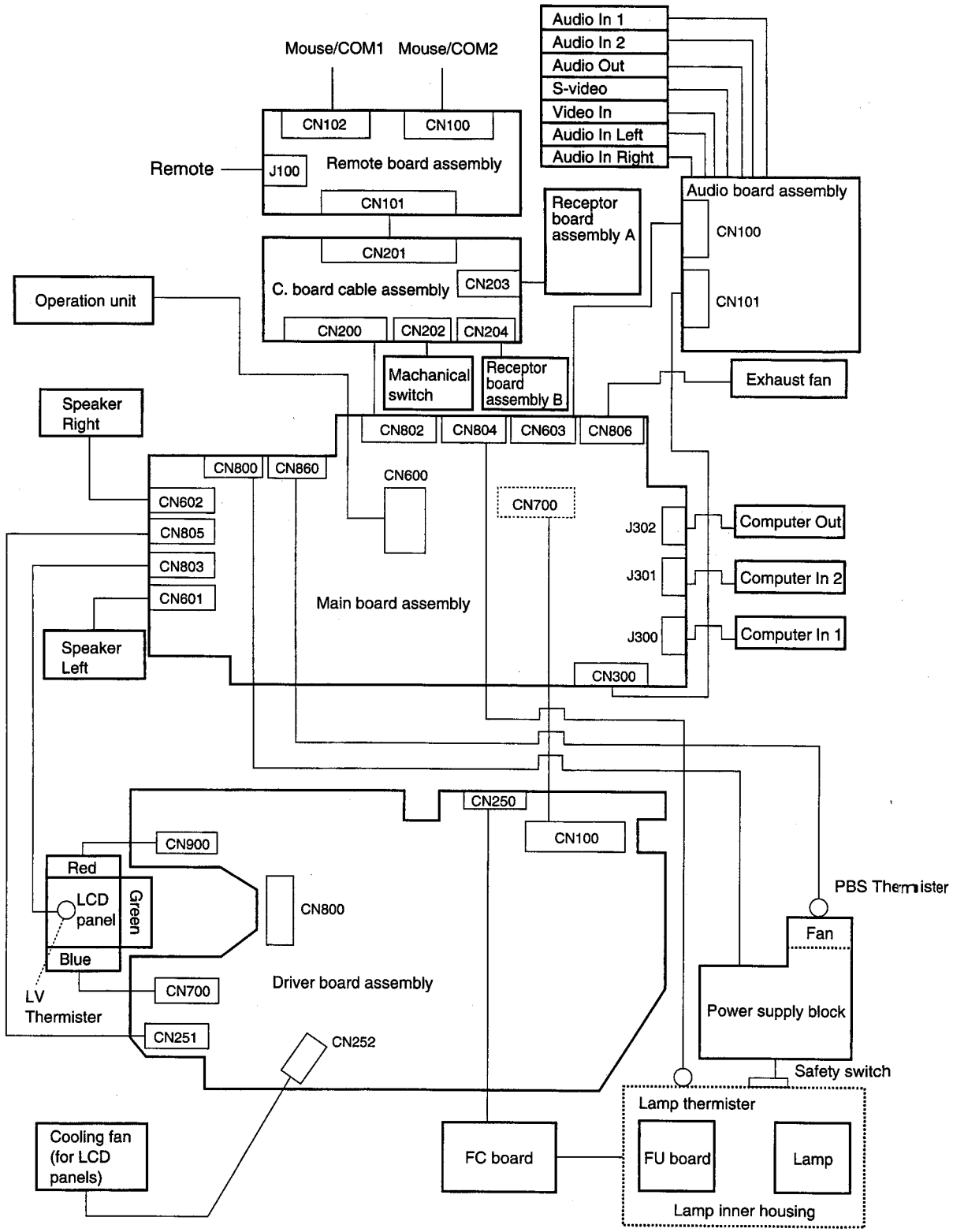
① The signals from the S-Video and Video input terminals are sent to the main board assembly via the audio board assembly; however, the signals from the Computer In 1/2 terminals are sent directly to the main board assembly without passing through any other boards. After input, the various signals are A/D converted by the main board assembly.

② The A/D converted video signals are temporarily stored to the video memory on the main board assembly, from where they are sent to the driver board assembly as required. The driver board assembly uses these signals to make over the LCD panel R/G/B drive signals.

③ The brightness of the light from the lamp inner housing (light source lamp) is equalized, polarized and then diffracted into R/G/B by the light guide unit. The image is created by the LCD panels by alternately transmitting and interrupting the diffracted light.

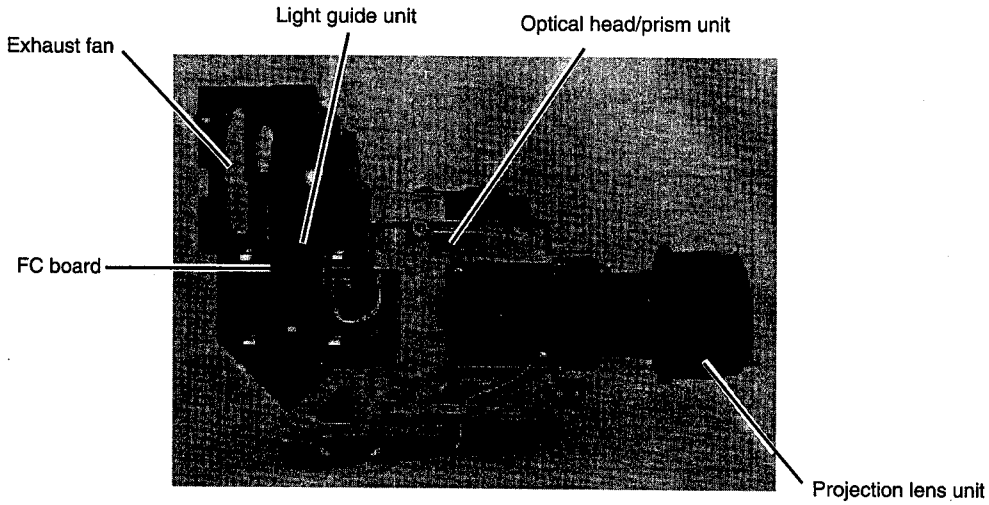
④ The R/G/B light beams transmitted by the LCD panels are combined by the prism unit and are then projected as images by the projection unit.

The circuit diagram is shown below. The main board assembly is the nucleus to which all of the other units are connected.



2-2. Optical System Overview

As shown below, the optical system configuration includes six blocks: exhaust fan, cooling fan light guide unit, optical head, prism unit and projection lens. The combination of these units and the driver boards is called the optical engine, and comprises one maintenance service unit.



Cautions:

* **Avoid impact or the application of pressure on the optical unit, and do not disassemble parts unless so directed in the disassembly and reassembly procedures.**
* **Uneven brightness or colors and tiny bright or black points may appear in projected images. This is not a malfunction or defect.**

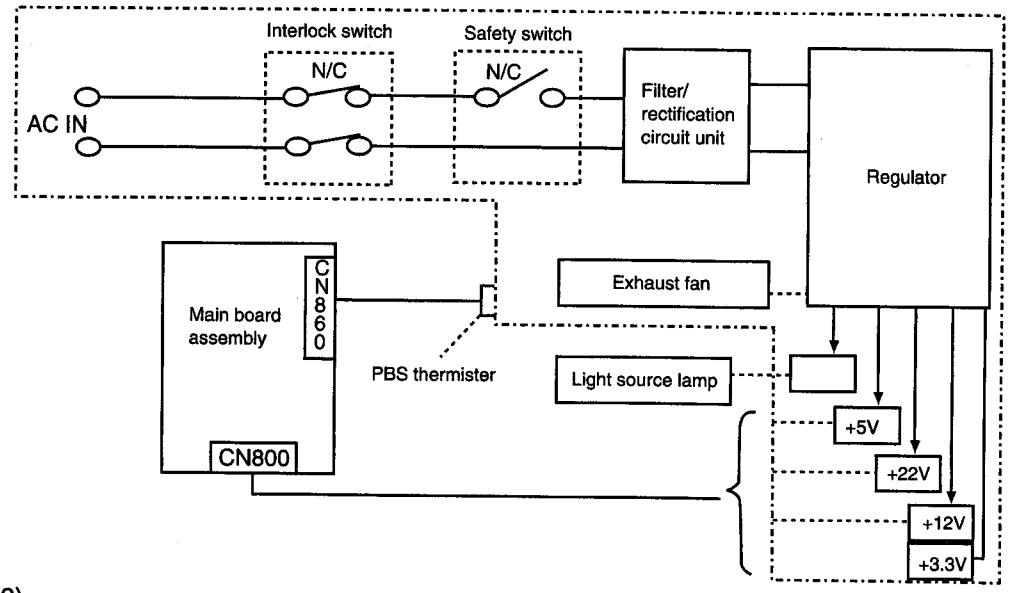
2-3. Power Supply Block

This unit creates the voltages for the following circuits and light source lamp from the AC input voltage. Never disassemble this unit during field maintenance service.

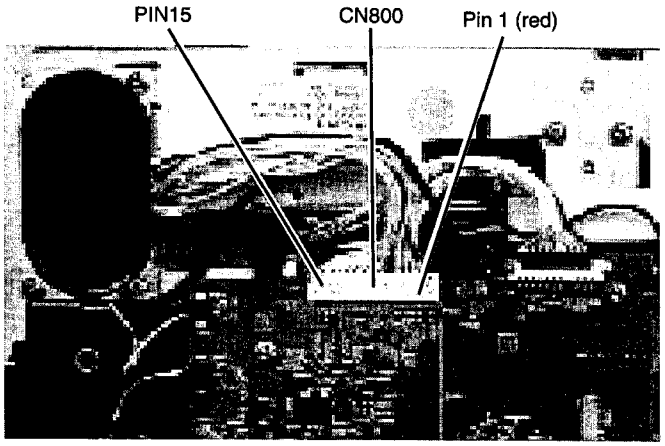
Signal	Application	Signal	Application
+5V	control circuit	PWDS	Power supply detect signalit
+3.3V	control circuit	L GND	Circui groundt
(+12V)	fan/audio circuit	+12V	LCD panel analog circuit
LPST	Power supply on/off signal	+22V	LCD panel
BACT	Backup power supply (+3.3V) on/off signal		

The BACT signal flows from the main board assembly to the power supply block.

(1) Function Blocks



(2) Connector and Pin Arrangement



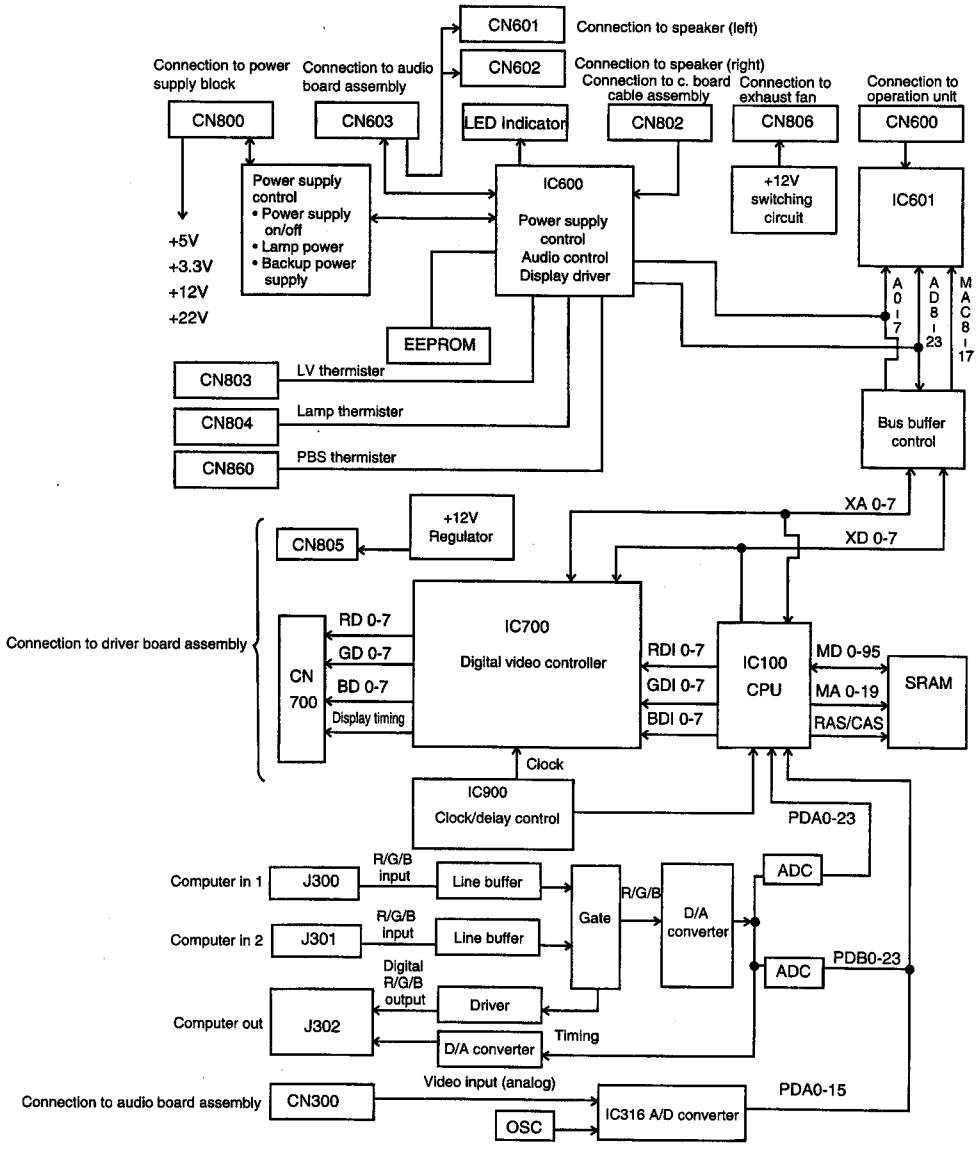
Output power supply (CN800) pin arrangement

Pin No.	Signal
1,2	+5V
3,4	+3.3V
5	(+12V)
6	LPST
7	BACT
8	PWDS
9 -13	L GND
14	+12V
15	+22V

2-4. Main Board Assembly

The main board assembly is the nucleus of control for this projector. All control, other than for the generation and output of display signals, is performed here. This board is serviced as one unit.

(1) Main Board Assembly Circuit Blocks



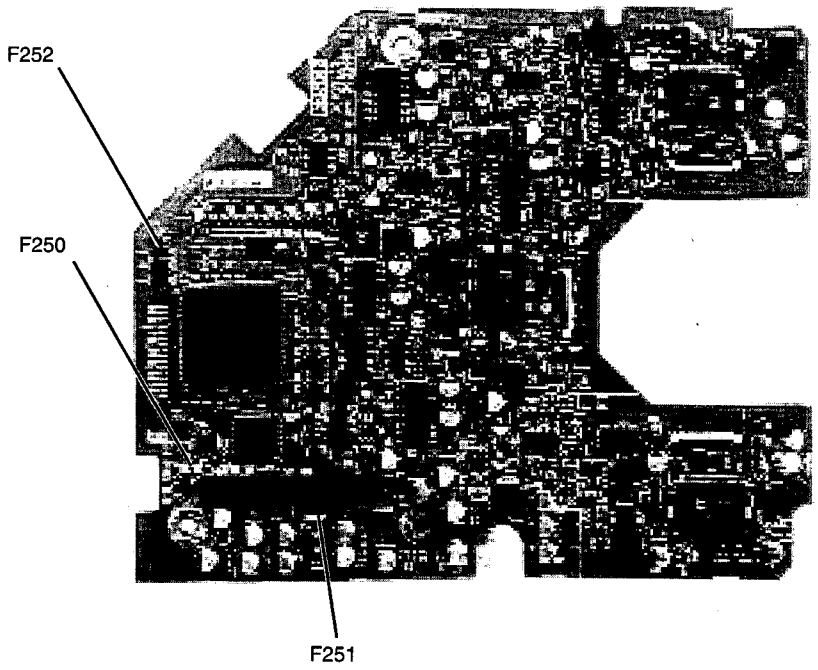
① Even when the projector is turned off, +3.3V backup bias is supplied from the power supply block to IC600 and the surrounding circuitry as long as the AC cable is connected to a power outlet.
② The temperatures of the LV, lamp and PBS thermisters are monitored. If a certain temperature is exceeded, the thermister signal sends an interrupt to IC600 to shut off the power supply.
③ A timer circuit is provided to manage the light source lamp usage time (service life). When the power switch is turned on after the lamp inner housing has been replaced because the lamp service life has been exceeded, etc., the fuse of lamp inner housing FU board will blow out and the lamp timer will automatically reset.

2-5. Driver Board Assembly

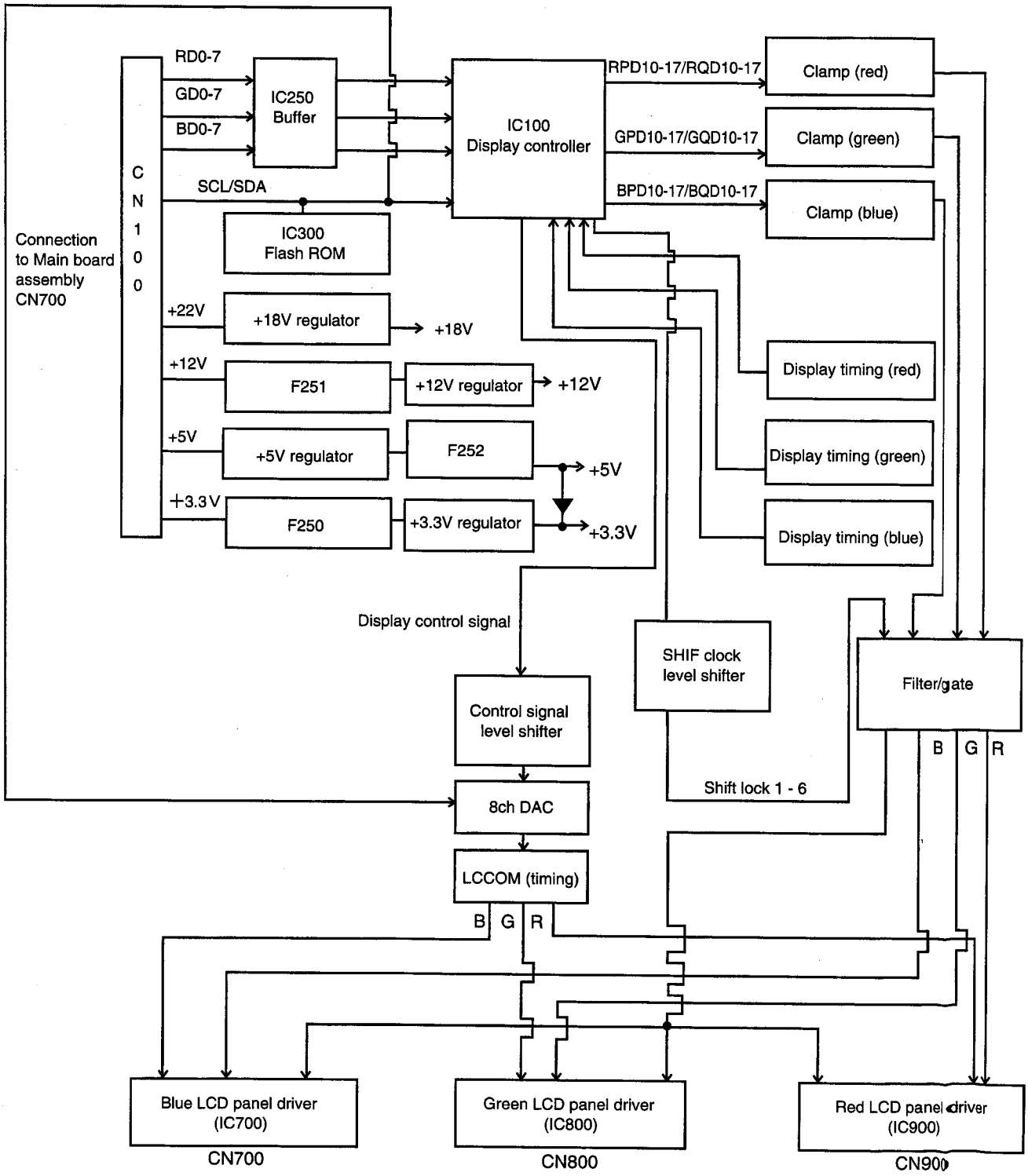
The driver board assembly functions include conversion of the R/G/B signals from the main driver board to analog signals for the LCD panels and control of display images using electrical correction data.

All of the fuses other than those shown in the board below are part of optical engine maintenance service.

Explanation No.	Part name	Application
F250	Fuse	+3.3V
F251	Fuse	+12V
F252	Fuse	+5V



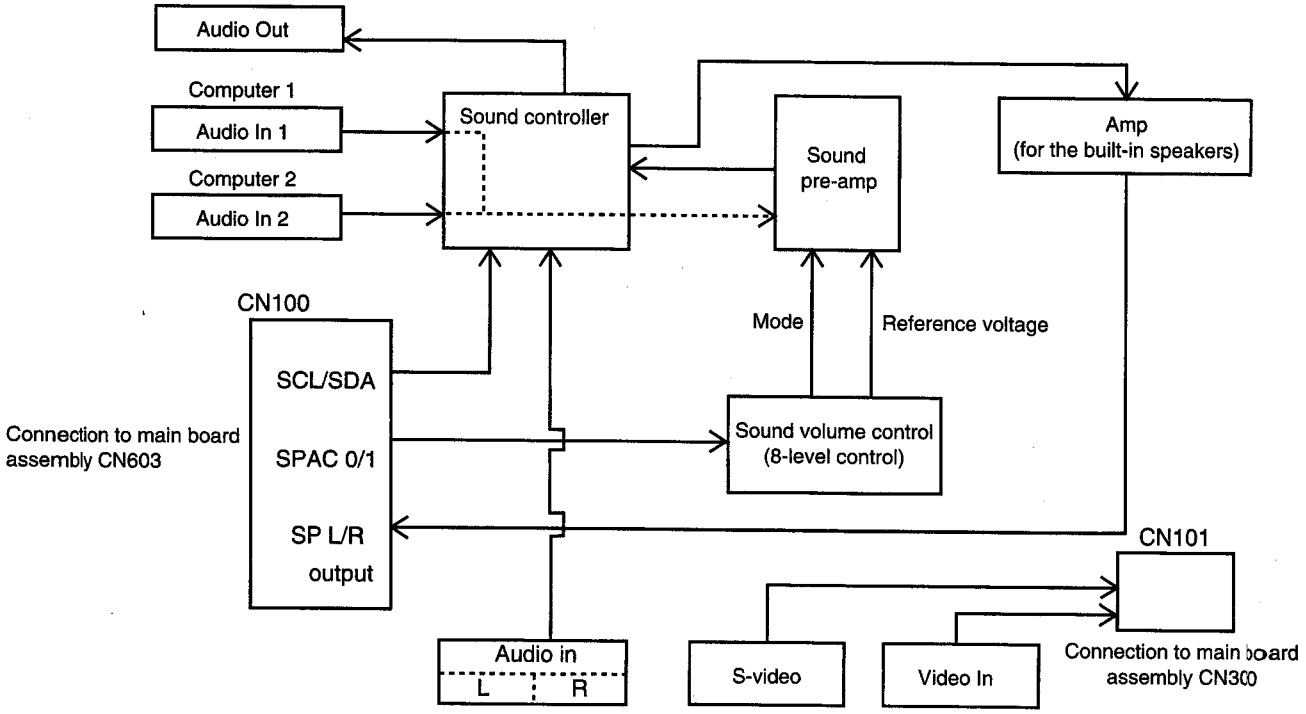
Driver Board Assembly Circuit Blocks



DAC: Digital Analog Converter

2-6. Audio Board Assembly

This board includes the interface connector for connecting audio signals from external video equipment and personal computers and the audio control circuit.
The diagram below shows the audio board assembly circuit blocks.



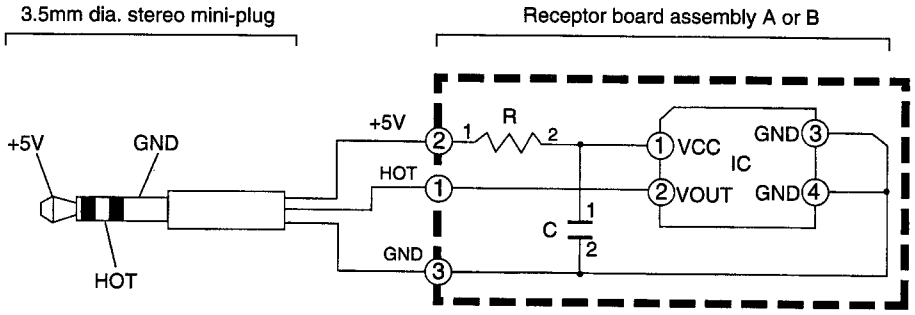
Cautions:

* **Video signals will not be projected even if input into the S-VIDEO terminal.**
* **If video signals are switched instantly when the broadcast type is set to AUTO from the Video menu, problems such as inaccurate may occur. This is not a malfunction or defect. In such cases, when switching video signals, either wait for 1 sec. or more with no signal before switching or change from the AUTO setting to one suitable for video signals.**
  For example, to switch from NTSC to PAL video signals with the broadcast type set to AUTO, wait for 1 sec. or more with no signal before switching to PAL. Or else change the broadcast type setting to PAL, either before or after switching to PAL video signals.

2-7. Remote Board Assembly

This board is used to connect the mouse cable and remote control interface. The accessory remote control can be used instead of the personal computer mouse by connecting CN100 (Mouse/COM1) or CN102 (Mouse/COM2) to the mouse connector of the personal computer using the accessory mouse cable. The remote imput terminal (J100) is used to provide the same functions as the remote control photo-receptor of the main unit at a distance.
Since the remote control interface can be used in many ways, a cable for the interface is not provided as an option.

Remote Control Interface Specifications
A cable length of up to 3m is possible using 2-core cable.



Caution:

* **The photo-receptor of the projector cannot be used when the Remote Input terminal is used.**
* **Using Mouse/Com 1, 2**
  Use is possible with IBM PC/AT compatible personal computers equipped with a PS/2 mouse terminal but not with IBM PC/AT compatible personal computers equipped with a serial mouse terminal but not a PS/2 mouse terminal. The relationships are as shown below.

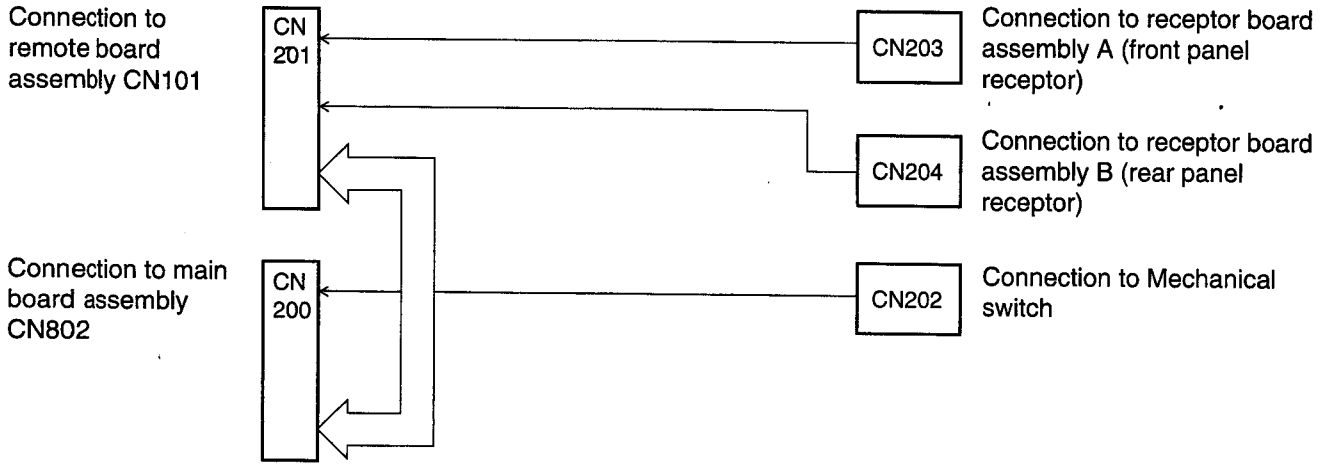
Combinations that can be used with IBM PC/AT compatible personal computers.

PS/2 mouse terminal + Mouse cable for IBM PC/AT compatible PC (accessory)	○
Serial mouse terminal + Mouse cable for IBM PC/AT compatible PC (accessory)	×
Serial mouse terminal + PS/2 <-> serial conversion adapter + Mouse cable for IBM PC/AT compatible PC (accessory)	×

○: can be used
×: cannot be used

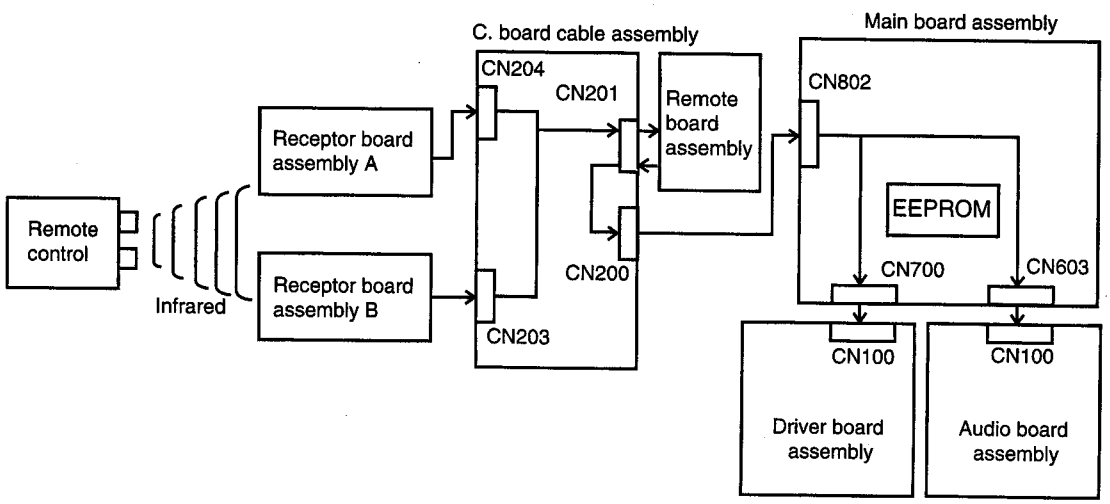
2-8. C. board cable assembly

This board is provided to relay various signals from the cable connectors to the main board. The connection blocks of the c. boald cable assembly are as shown below.


Connection to remote board assembly CN101
CN 201
CN203
Connection to receptor board assembly A (front panel receptor)
CN204
Connection to receptor board assembly B (rear panel receptor)
Connection to main board assembly CN802
CN 200
CN202
Connection to Mechanical switch

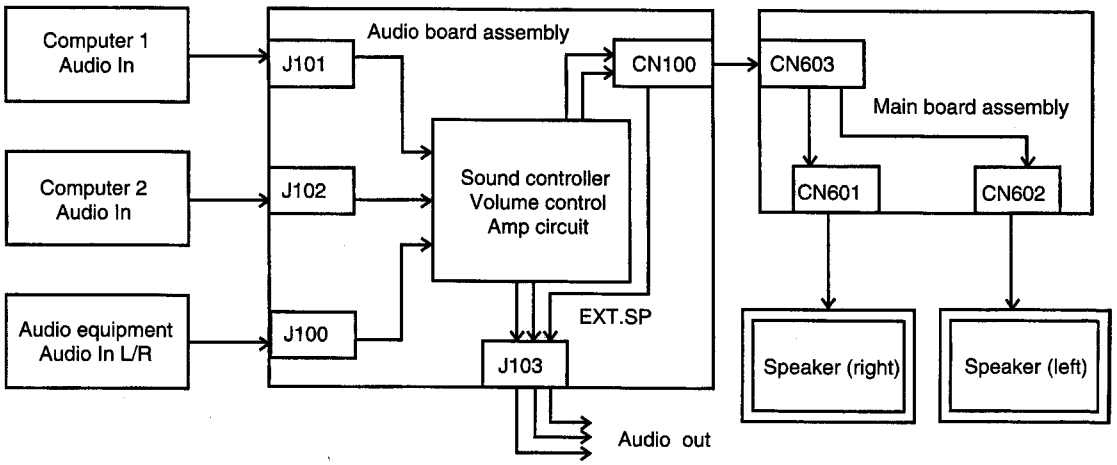
2-9. Receptor Board Assembly A/B

These boards contain the elements which detect signals from the remote control and are mounted on the front panel (receptor board assembly A) and rear panel (receptor board assembly B) of the main unit.
The control blocks are as shown below.



2-10. Speaker Unit

Two speaker units are built into the main unit and output the audio input from personal computer or audio-visual (AV) equipment connected to the main unit. Audio is not output from the built-in speakers when external speakers are connected to the Audio Out terminals on the rear panel of the main unit using the accessory audio cables.
The speaker control blocks are as shown below.



2-11. Lamp Inner Housing

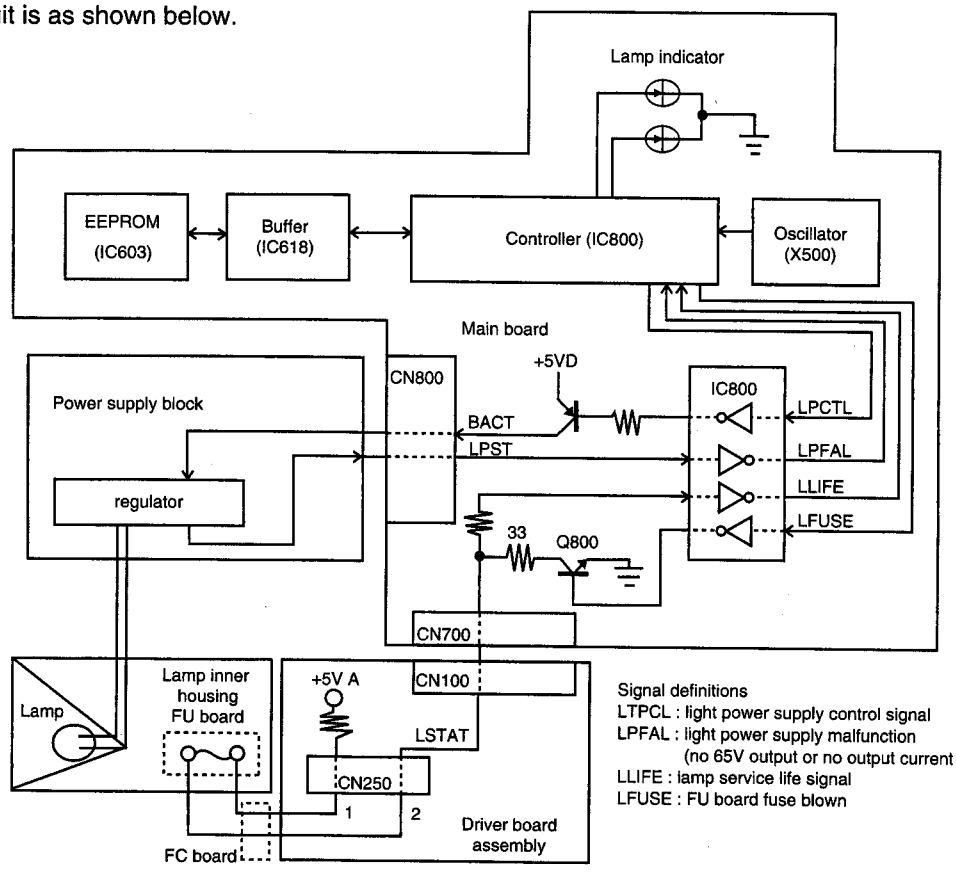
This unit includes the connectors for connecting the source lamp and power supply, and the fuse board (FU board). This unit is handled as a consumable component.

The brightness of the light source lamp decreases with the passage of time. Brightness is maximum at the start of usage but will decrease by about one-half after approximately 2,000 hours of use. Even though the service life of the lamp of this projector is 2,000 hours, we recommend that the lamp inner housing be replaced before 2,000 hours elapse if the brightness is considered to be too low. The total accumulated time that the lamp is lighted is written to the EEPROM on the main board assembly. When the end of the service life approaches, or is reached, main board assembly outputs a signal and performs the following controls.

When the total number of hours of usage has reached 1,900 hours (1,900 hours or more, but less than 2,000 hours).	• PLACE LAMP is displayed on-screen approx. 30 sec. after the light source lamp lights. • The lamp indicator lights red and orange alternately. • The on-screen menu lamp time display changes from black to red. • Replace the lamp inner housing after confirming the above displays.
When the total usage reaches 2,000 hours.	• The lamp indicator lights red. • If the light source lamp is lit, turn it off and cool. • The light source lamp will not light until the lamp inner housing has been replaced with a new one.
When the light source lamp is abnormal, regardless of the number of hours of usage.	• The lamp indicator blinks in red • Unplug the power cord from the power outlet and check the lamp inner housing

CAUTION **When the lamp indicator blinks in red, it is possible that the light source lamp is broken. In such event, use caution to avoid injury from the broken lamp glass.**

The control circuit is as shown below.



2-12. Indicators, sensors and switches

Operation indicators (projector status)

Color	Status	Description
orange	lights	sleep mode
green	lights	light source light source lamp lights, during projection
orange	blinks	during high-temperature operation
red	blinks	internal malfunction
red	lights	stops due to abnormally high temperature

Light source lamp indicators (light source light source lamp status)

Color	Status	Description
–	Turns off	While light source lamp is off.
Green	Lights	While light source lamp is on.
Green	Blinks	Light source warm-up.
Orange and red	Blink alternately	Near end of light source lamp service life. Replace lamp.
Orange	Blinks	While projector is cooling.
Red	Lights	Near end of light source lamp service life. Replace lamp.
Red	Blinks	Light source lamp or power supply block failure.

Sensors/Switches (Detection of failures of various parts to maintain safety.)

Name	Location	Function
mechanical switch	bottom chassis assembly	Prevents the fan operating when the filter motor is removed.
inter-lock switch	power supply block	Shuts off the AC power supply when the light source lamp cover is open to prevent burning due to unnecessary light source lamp lighting.
safety switch	optical engine	When the area around the light source lamp exceeds a certain temperature, this switch operates to shut off the AC power supply. The power supply cannot be turned on again until the temperature lowers.
lamp thermister (cable assembly G)	optical engine	When the area around the light source lamp exceeds a certain temperature, this switch operates to shut off power supply block output.
PBS thermister (cable assembly I)	power supply block	When the area around the power supply block exceeds a certain temperature, this switch operates to shut off power supply block output.
LV thermister (cable assembly H)	optical engine	When the area around the LCD panel exceeds a certain temperature, this switch operates to shut off power supply block output.

2-13 Fans

The following fans have been provided in this projector to maintain the performance.

Fan name	Operation conditions
cooling fan	Operates when the light source lamp is lit and when the projector is cooling.
exhaust fan	Operates when the light source lamp is lit and when the projector is cooling. Operates at high speed when the internal temperature of the projector is high and at low speed when the internal temperature of the projector is low.
power supply block fan	Operates when the power cord is connected to a power outlet.

3. PRODUCT SERVICE PROVISIONS

3-1. Before Starting Disassembly and Reassembly

3-1-1. Cautions

Before starting the disassembly and reassembly of this projector, carefully read and observe "Safety Cautions" located in the front part of this service manual. Also, do not disassemble any component unless specifically directed to do so in this service manual (for example, power supply block disassembly, etc.).

(1) Handling the Optical Engine

The optical engine configuration includes the optical block and driver board assembly. There are several locations in the optical block where various mechanical adjustments are necessary. There are also some individual differences in the display signal output drivers, even for the driver board assembly. Individual differences are also present in the opto-mechanical components (LCD panels, etc.) themselves. Because of that, it is necessary not only to make mechanical adjustments but to eliminate the individual electrical and mechanical differences as well if good displays are to be obtained. Because of this, the various calibration values are written to the flash ROM on the driver board assembly at the factory. These operations require special tools and jigs, and special techniques; therefore, repair in the field is not possible. Also, when ordering parts for maintenance, or when making repairs, it is necessary to handle the optical block and driver board assembly which comprise the optical engine as a single unit.

① In the event that either the optical block or driver board assembly malfunctions for any reason, it is necessary to replace or repair both the optical block and driver board assembly together as a set. When shipping the projector to the factory for repair, be sure to include both the optical block and driver board assembly.

② It is necessary to use the optical block and driver board assembly as a set. Never replace just one of these units individually (for example, using the driver board assembly from one set to repair another set).

③ Do not disassemble the optical block components not mentioned in the disassembly and reassembly procedures. The optical block requires precision adjustments and thus cannot be adjusted or repaired in the field.

④ The optical engine is sensitive to vibration and shock and must be handled carefully.

⑤ Always use a special packing carton when shipping the optical engine. (Please refer to 7-1)

(2) Main Unit Disassembly

① When disassembling the main unit, work in a location as dustfree as possible and use care to prevent the entry of dust from the outside. The entry of dust into components related to the display quality of the optical engine, etc., can adversely affect the projected image.

② It is possible for dust adhered in and around the fan and filter to migrate to optical components during main unit disassembly and adversely affect display quality. Thus, make sure there is no dust, dirt or other soiling before starting disassembly. Clean with a vacuum cleaner, etc., if necessary.

③ The optical engine and circuit board are sensitive to static electricity. When removing these components, store them in anti-static-electricity bags for protection.

④ When performing any of the following operations, check the lenses and glass surfaces of the relevant units and peripheral components for soiling before re-installing. If any soiling is discovered, remove by wiping with isopropyl alcohol.

- Optical engine removal
- Lamp inner housing removal
- Filter cover assembly removal

⑤ Disengage the connector lock before disconnecting the LCD panel FPC cable from the driver board assembly connector. To disengage the connector lock, use tweezers, etc., to push upward on both ends of the connector at the same time.

⑥ When replacing mechanical components (including the light source lamp, fuse, air filter, etc.) used inside the projector, use only those components supplied by this company as shown in the Parts List.

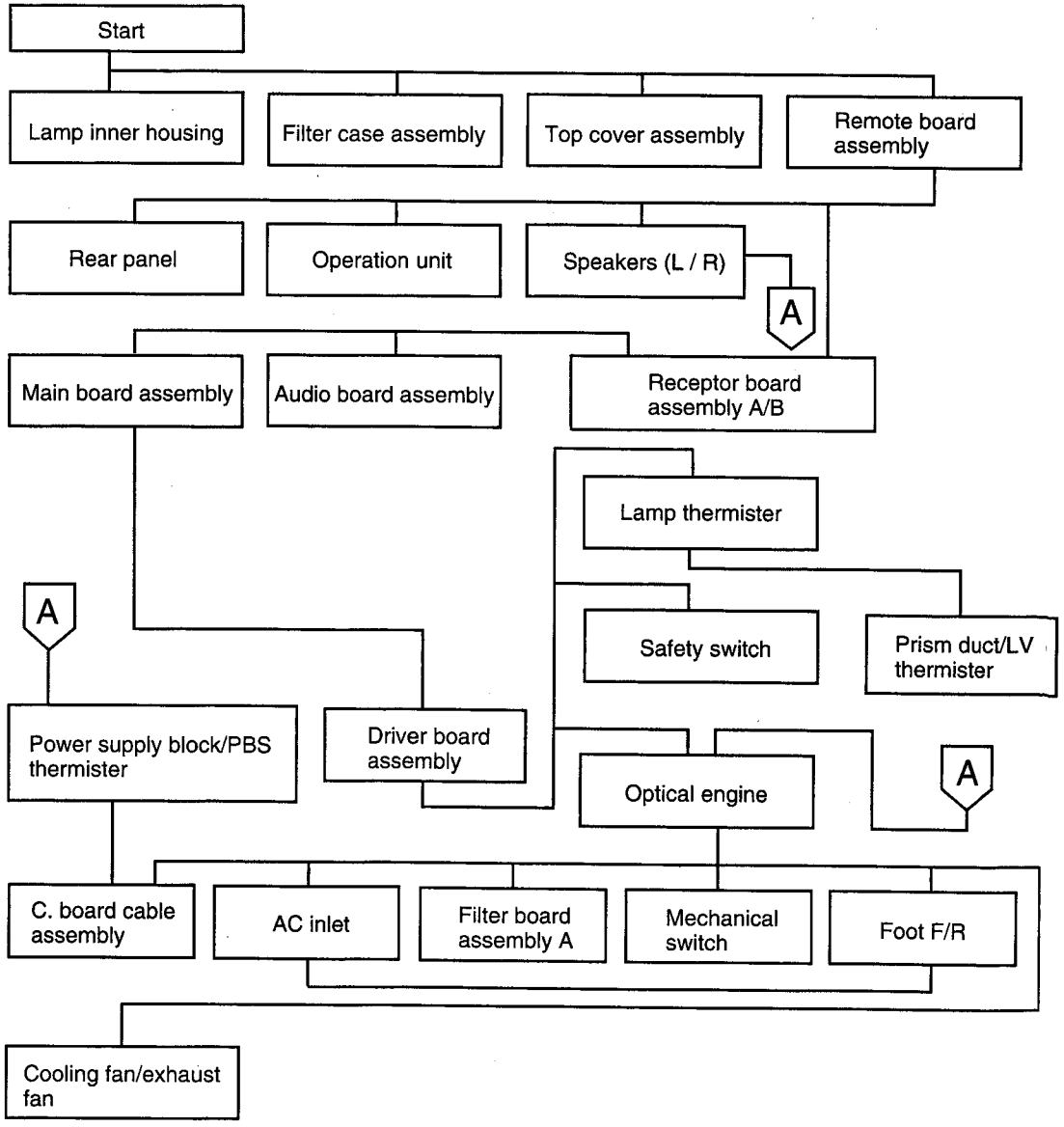
⑦ Always turn off the power switch and disconnect the power cable from the power outlet before disassembling the projector.

3-1-2. Tools and Supplies

- Phillips screwdriver (20cm): for main unit case and internal mechanical component disassembly.
- 5mm nutdriver: for removing nuts.
- 5.5mm nutdriver: for removing nuts.
- Tweezers: for disconnecting the FPC cable.
- Brush: for cleaning off dust.
- Vacuum cleaner: for removing dust.
- Air blower: for cleaning around the fan.
- Isopropyl alcohol: for cleaning glass surfaces.

3-2. Disassembly and Reassembly

The flow chart below shows the disassembly sequence. Unless otherwise specified, reassemble by reversing the disassembly sequence.



3-2-1. Lamp Inner Housing Removal

WARNING

This lamp is extremely hot immediately after being turned off. Allow it to cool for at least 60 min. before starting work.

Caution:
The power supply block fan will continue to operate until the power cable is disconnected from the power outlet. Always disconnect the power cable from the power outlet before starting work.

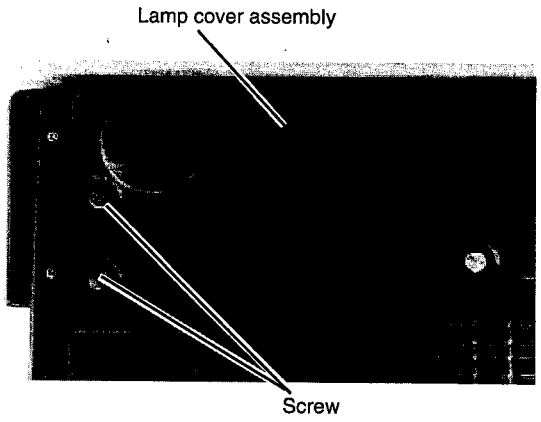


Fig. 3-2

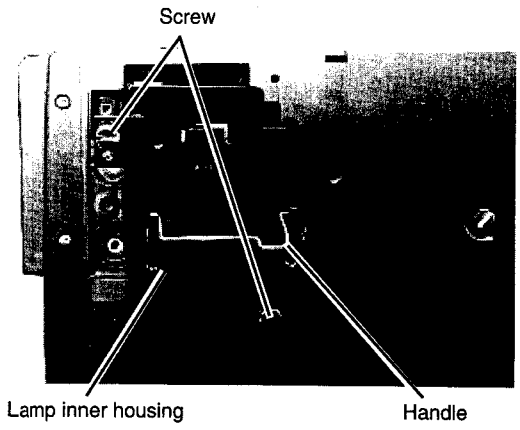


Fig. 3-3

1. Remove the 2 lamp cover mounting screws from the bottom of the main unit.
2. Remove the 2 lamp inner housing mounting screws.
3. Use the handle to remove the lamp inner housing by lifting upward.

Caution:
Do not touch the glass surface of the lamp with bare hands when installing since this will result in soiling.

3-2-2. Filter Case Assembly Removal

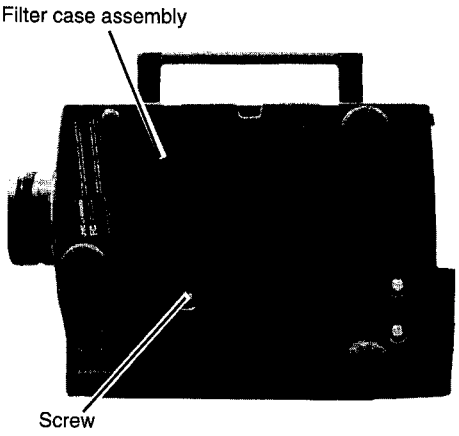


Fig. 3-4

Remove the 1 filter case assembly mounting screw from the bottom of the chassis and remove the filter case assembly.

3-2-3. Top Cover Assembly and Handle Removal

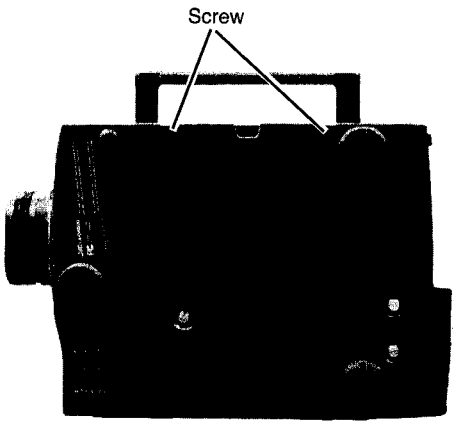


Fig. 3-5

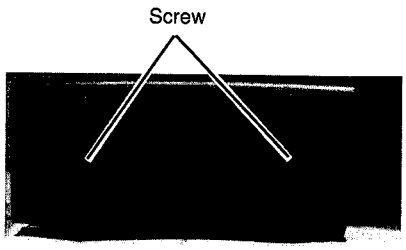


Fig. 3-6

1. Lift up on the handle.
2. Remove the 2 screws from the handle holder.
3. Remove the 2 screws from the side of the main unit.
4. Press on the left and right sides of the top cover assembly and slowly lift straight upward.

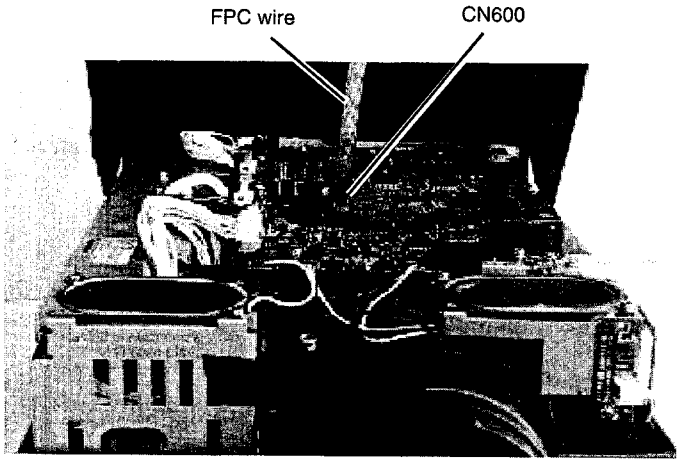


Fig. 3-7

5. Disconnect the FPC wire from the main board assembly CN600 connector.
6. Remove the top cover assembly.
7. Remove the handle from the bottom case.

3-2-4. Remote Board Assembly Removal

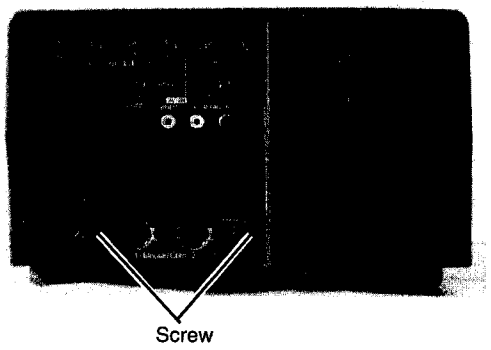


Fig. 3-8

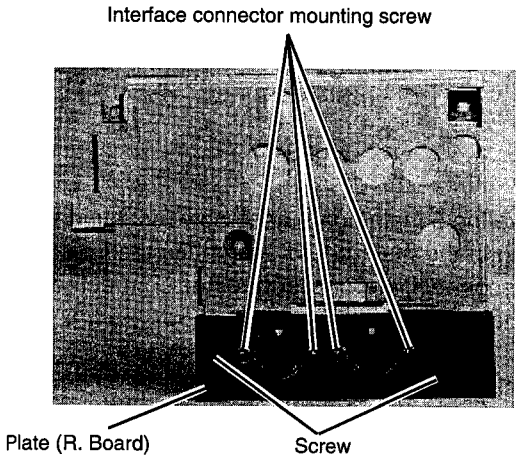


Fig. 3-9

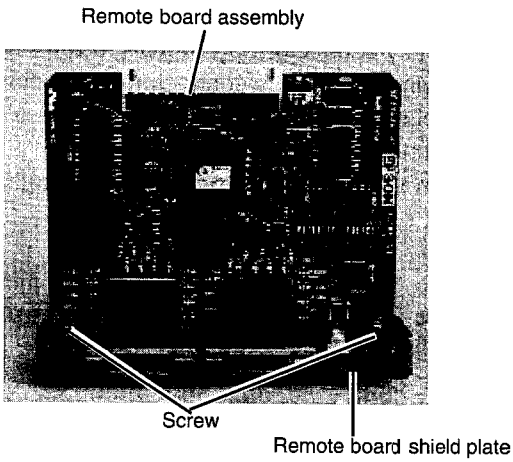


Fig. 3-10

1. Remove the 2 screws fastening the plate (R. Board).
2. Pull out the remote board assembly.
3. Remove the 2 screws fastening the remote board and then remove the remote board shield plate.

3-2-5. Rear Panel Removal

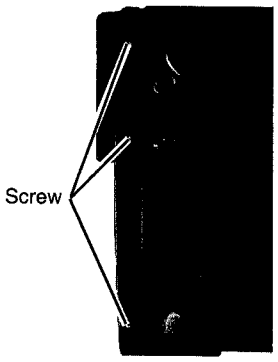


Fig. 3-11

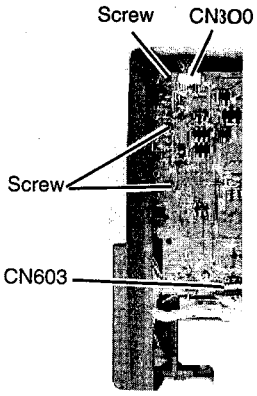


Fig. 3-12

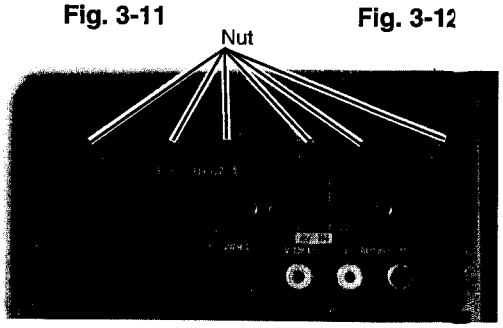


Fig. 3-13

1. Remove the 6 nuts from the main board assembly connector.
2. Remove the 3 rear panel mounting screws from the bottom of the bottom chassis.
3. Remove the 3 screws fastening the audio board shield plate and main board, and then remove 1 screw from the top of the AC inlet hold plate.

4. Disconnect the cables connected to main board assembly connectors CN300/CN603.
5. Disconnect the cable connectors connected to remote control receptor board assembly B (these connectors are located on the rear panel).
6. Remove the rear panel by gripping both sides and lifting.

Caution:
When re-installing the rear panel, push it into position slowly and gently.

3-2-6. Operation Unit Removal

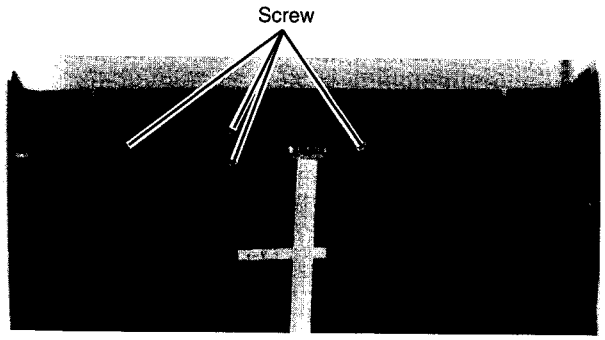


Fig. 3-14

1. Remove the 4 screws fastening the operation unit.

3-2-7. Speaker (Left/Right) Removal

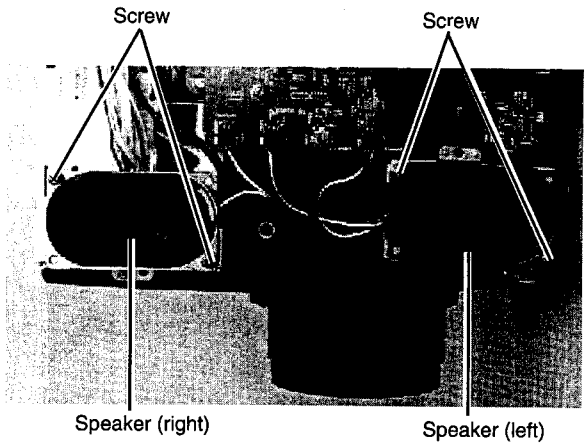


Fig. 3-15

Speaker (Right)
1. Remove the 2 speaker (right) mounting screws.
2. Disconnect the speaker cable from CN602 on the main board assembly.

Speaker (Left)
1. Remove the 2 speaker (left) mounting screws.
2. Disconnect the speaker cable from CN601 on the main board assembly.

Caution:
When re-installing the speakers, align the positions of the two screw holes and tighten all screws to the same torque.
Use caution to avoid damaging the speaker cushion (the sponge on top of the speaker).

3-2-8. Main Board Assembly Removal

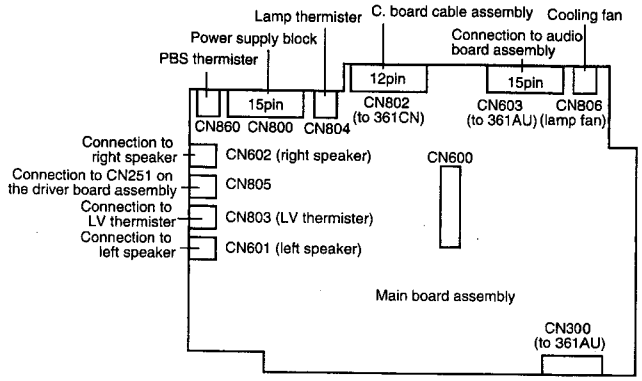


Fig. 3-16

1. Disconnect all cables connected to the main board assembly.

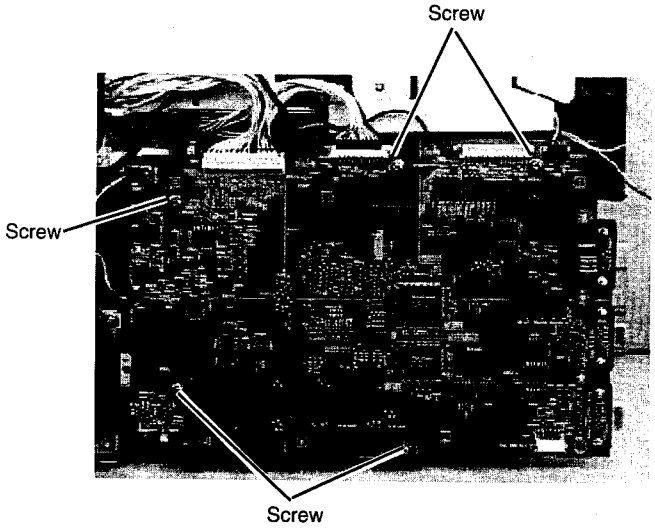


Fig. 3-17

2. Remove the 5 main board assembly mounting screws.
3. Firmly grip the main board assembly, then disconnect and disconnect the one connector connected to the driver board assembly.

Caution:
Use care not to apply mechanical stress to boards. Torsional and bending stress can cause functional disorders due to broken connections, peeled lands, etc.

3-2-9. Audio Board Assembly Removal

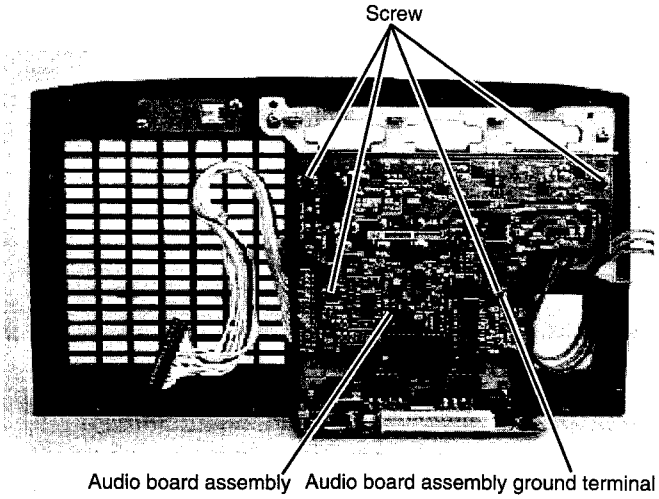


Fig. 3-18

1. Remove the 4 screws fastening the audio board assembly.

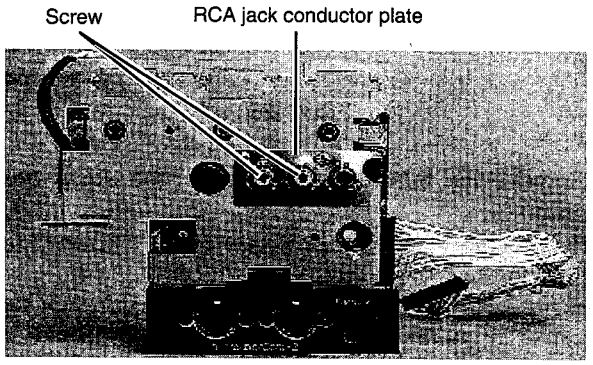


Fig. 3-19

2. Remove the 2 screws fastening the RCA jack conductor plate and then remove the RCA jack conductor plate.
3. Remove the audio board assembly.

3-2-10. Receptor Board Assembly A/B Removal

Receptor Board Assembly A

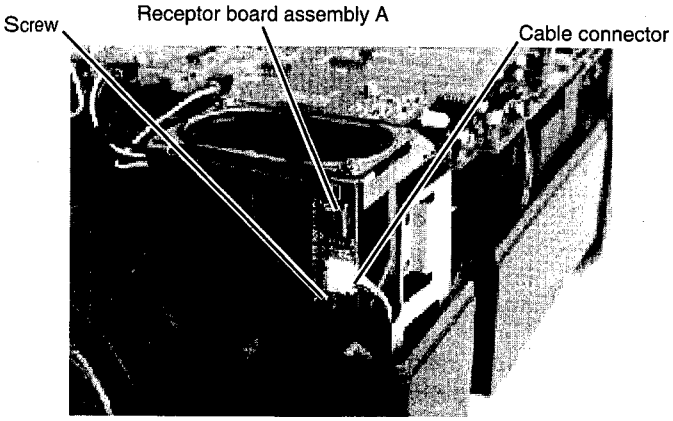


Fig. 3-20

1. Disconnect the remote control receptor board assembly A cable connector.
2. Remove the 1 screw fastening the remote control receptor board assembly A to the speaker bracket.

Receptor Board Assembly B

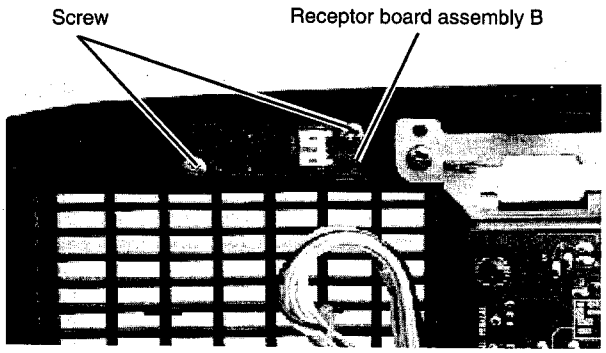


Fig. 3-21

1. Disconnect the receptor board assembly B cable connector.
2. Remove the 2 screws fastening the receptor board assembly B to the rear panel.

Caution:
When re-installing a board, align the holes in the board with the bosses on the speaker bracket or rear panel and then tighten the screws.

3-2-11. Power Supply Block/PBS Thermister (Cable Assembly I) Removal

Power Supply Block

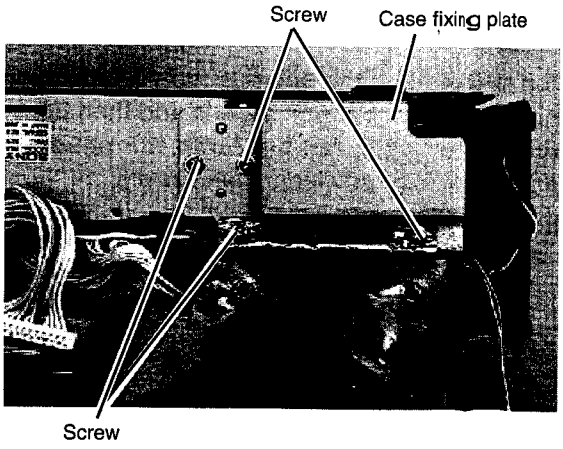


Fig. 3-22

1. Remove the 4 screws from the case fixing plate and then remove the case fixing plate.

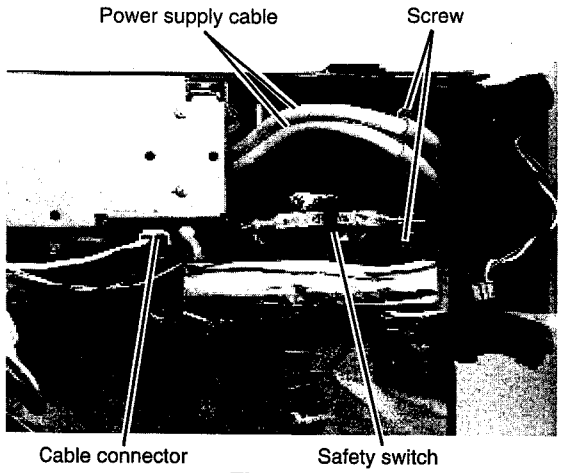
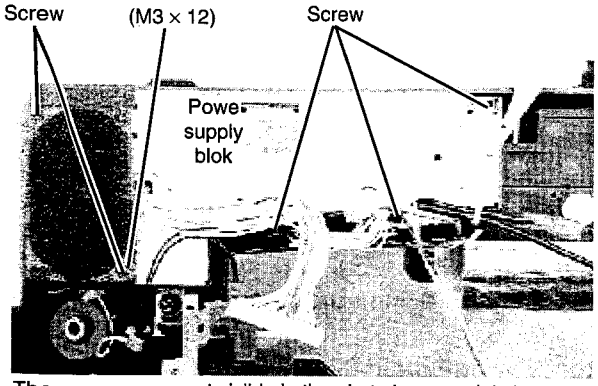


Fig. 3-23

2. Disconnect the 2 cables connected to the safety switch.
3. Remove the 2 screws fastening the power supply cable.
4. Disconnect the cable connectors (black/white) connected to the power supply block.



These screwe are not visible in the photo because it is located under the power supply block.

Fig. 3-24

5. Remove the 5 screws fastening the power supply block.
6. Remove the power supply block by lifting it straight up.

Caution:
When re-installing the power supply block, align with the bosses of the bottom chassis and then tighten the screws. Check the fan built into the power supply block for soiling and clean if necessary.

PBS Thermister

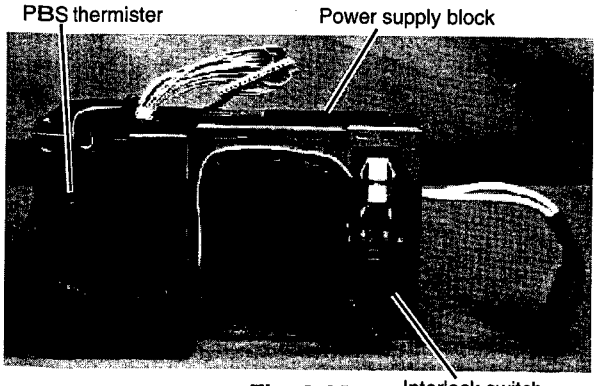


Fig. 3-25

1. Remove the 1 screw fastening the PBS thermister mini-clamp.
2. Remove the PBS thermister from the mini-clamp.

3-2-12 Driver Board Assembly Removal

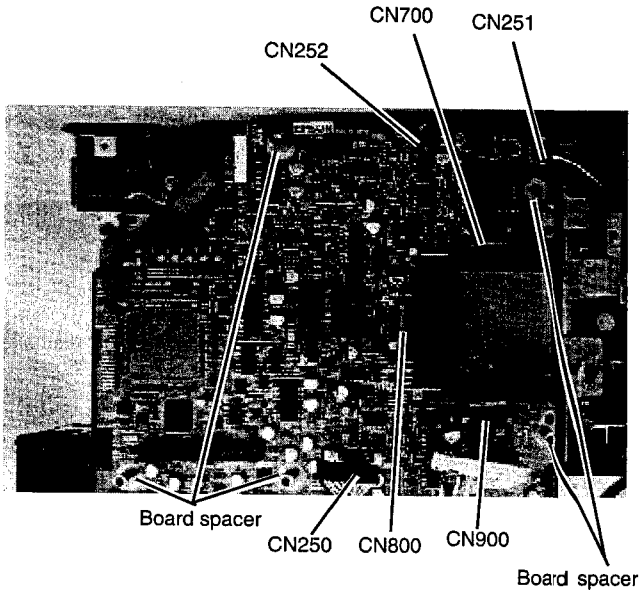


Fig. 3-26

1. Remove the 5 board spacers from the driver board assembly.
2. Disconnect the cables from connectors CN250/251/252.
3. Disengage the locks of connectors CN700/800/900 and then remove the FPC cable.
4. Remove the driver board assembly by lifting straight up.

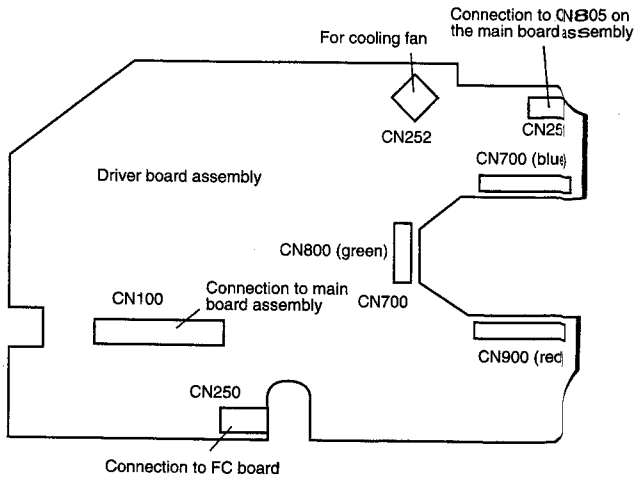


Fig. 3-27

Caution:
Before disconnecting the FGPC cable from the connector, first disengage the connector locks and then remove the locks by lifting straight up.

3-2-13. Lamp Thermister (Cable Assembly G) Removal

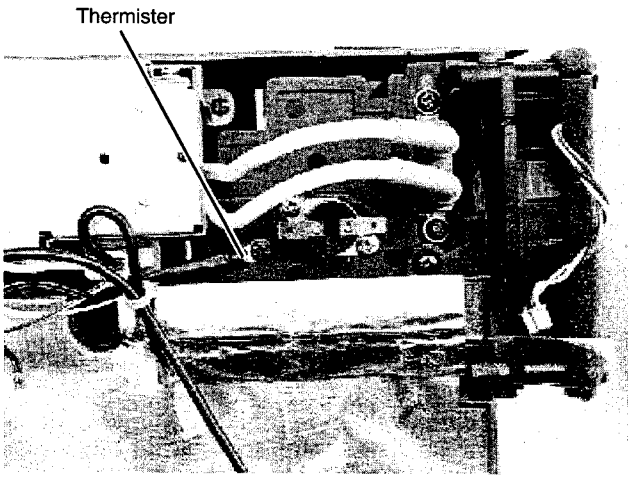


Fig. 3-28

1. Remove the 1 screw connecting the lamp thermister to the optical engine.

3-2-14 Prism Duct/LV Thermister (Cable Assembly H) Removal

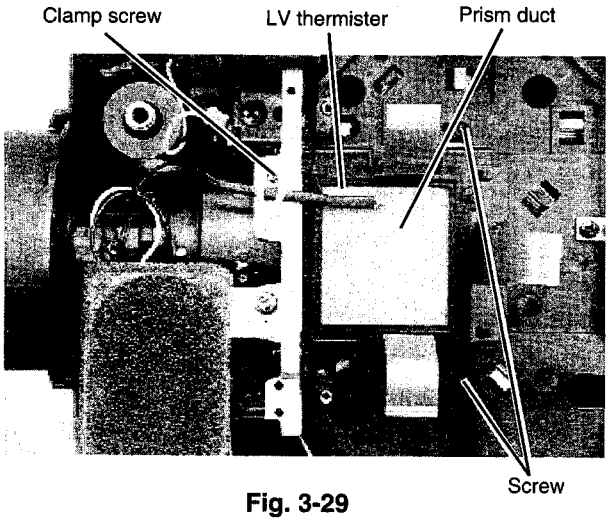


Fig. 3-29

1. Remove the shield plate installed between the driver board assembly and optical engine.
2. Remove the clamp screw fastening the LV thermister.
3. Remove the 2 prism duct mounting screws.
4. Remove the prism duct by lifting straight up.

Cautions:

* **The prism duct contains LCD panels and many other optical components which are extremely sensitive to dust. When removing the prism duct, work in an environment as dustfree as possible and use care to prevent the entry of dust. If dust should enter the prism duct and adhere to the LCD panels, etc., remove it by blowing with an air blower.**
* **When re-installing the prism duct, make sure that the 3 FPC cables which connect the LCD panel and driver board are not caught on the light guide unit.**
  The filter in the prism duct is easily soiled by dust. Check before re-installing and clean if necessary.

3-2-15 Safety Switch Removal

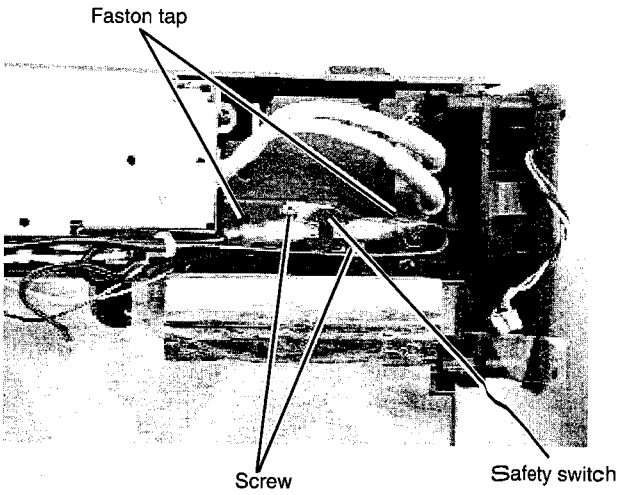


Fig. 3-30

1. Disconnect the faston tap terminals of the 2 cables connected to the safety switch.
2. Remove the 2 screws fastening the safety switch and then remove the safety switch.

Cautions:

* **Do not apply any force to the safety switch terminals when disconnecting the faston tap terminals of the cables.**
* **There is no particular specification for cable connection. Connect to any optional terminal of the safety switch.**

3-2-16. Optical Engine Removal

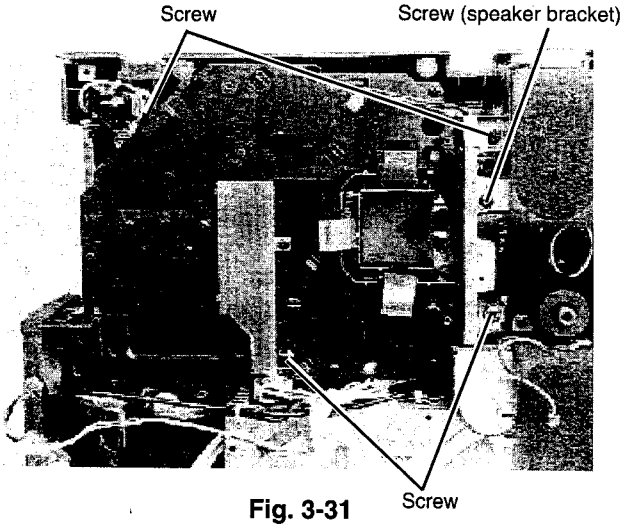


Fig. 3-31

1. Remove the 1 screw fastening the speaker bracket to the optical engine.
2. Remove the 4 optical engine mounting screws.
3. Remove the speaker bracket.
4. Remove the optical engine from the bottom chassis by lifting straight up.

3-2-17. C. Board Cable Assembly Removal

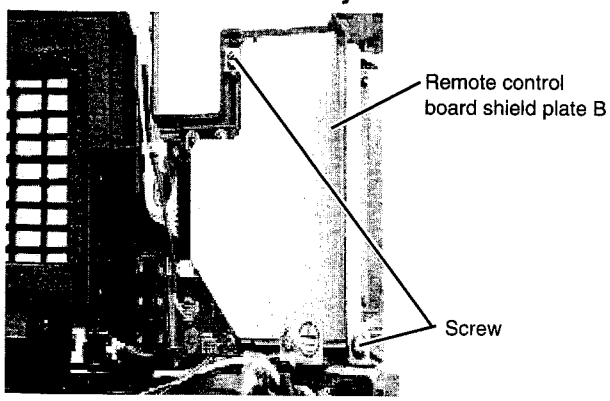


Fig. 3-32

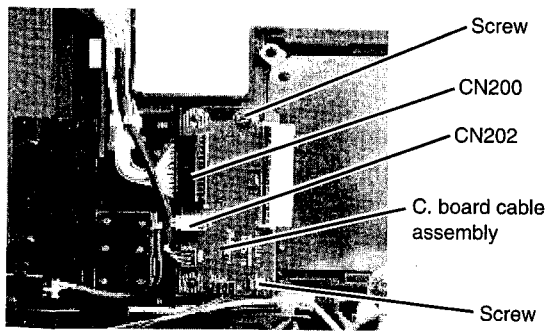


Fig. 3-33

1. Remove the 2 remote control board shield plate mounting screws.
2. Remove the 2 c. board cable assembly mounting screws and then remove the c. board cable assembly.

3-2-18. AC Inlet (AC Cable Assembly) Removal

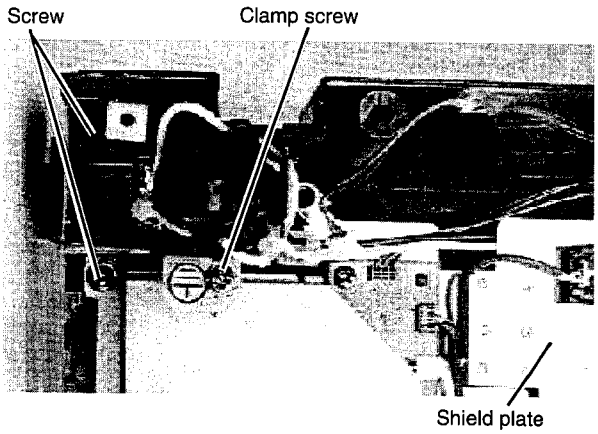


Fig. 3-34

1. Remove the 2 AC inlet mounting screws and 1 clamp screw.
2. Remove the cable from below the shield plate.
3. Disconnect the cable connector connected to CN6 on the filter board assembly.
4. Remove the AC inlet from the bottom chassis.

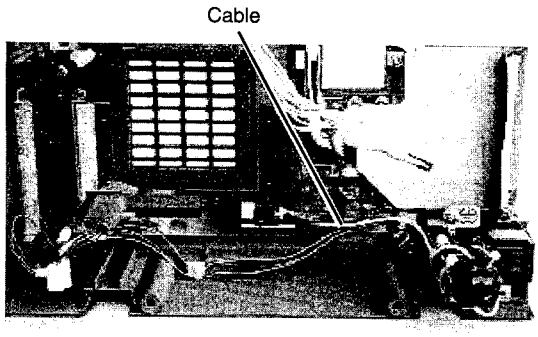


Fig. 3-35

3-2-19. Filter Board Assembly A Removal

1. Disconnect the cable connector connected to CN6 on filter board assembly A.
2. Remove the 4 filter board assembly A mounting screws.
3. Remove filter board assembly A from the bottom chassis.

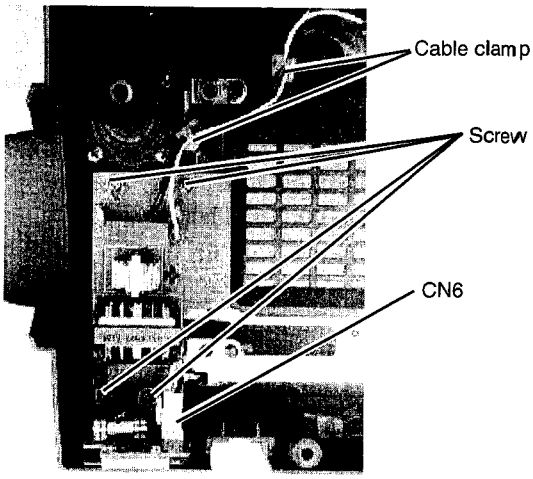


Fig. 3-36

Caution:
When re-installing filter board assembly A, always arrange the cable inside the clamp and cable guide.

3-2-20 Mechanical Switch Removal

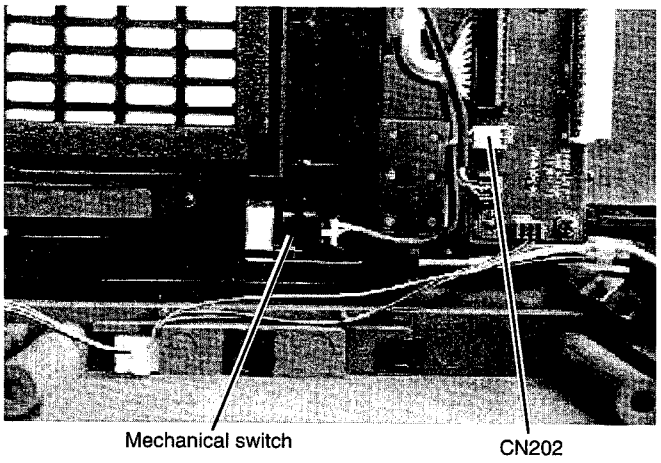


Fig. 3-37

1. Disconnect the cable connecting to the switch from connector CN202 from the connector board cable assembly board.
2. Push the tabs of the bottom chassis outward and remove the mechanical switch.

Caution:
Use caution because the application of excessive force on the bottom chassis tabs can result in damage or breakage.
When re-installing the mechanical switch, align the switch cover screw holes with the bosses of the bottom chassis.

3-2-21 Foot (Front)/Foot (Rear) Removal

Foot (front)

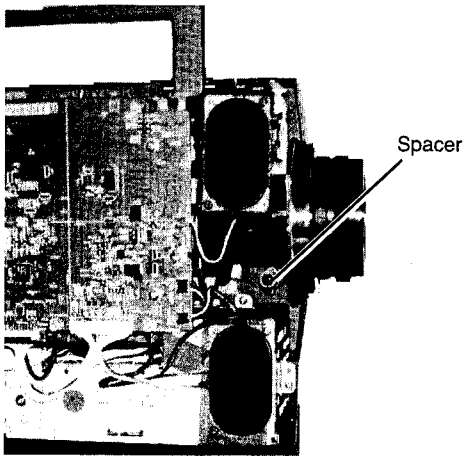


Fig. 3-38

1. Rotate the foot (front) clockwise to shorten the post.
2. Remove the spacer on the end of the bolt.
3. Remove the foot (front) by turning it counterclockwise.

Foot (rear)

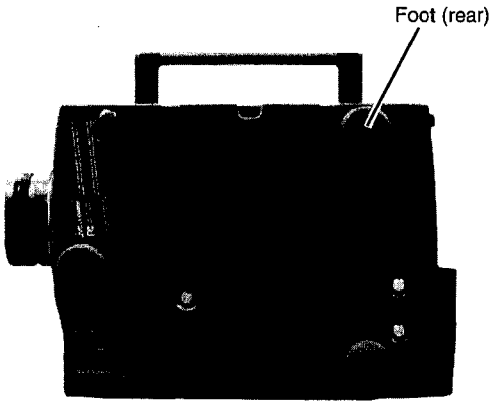


Fig. 3-39

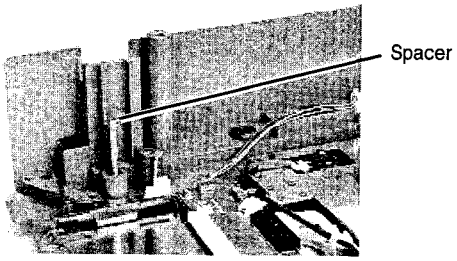


Fig. 3-40

1. Rotate the foot (rear) clockwise to shorten the post.
2. Remove the spacer on the end of the bolt.
3. Remove the foot (rear) by turning it counterclockwise.

3-2-22. Cooling Fan/Exhaust Fan Removal

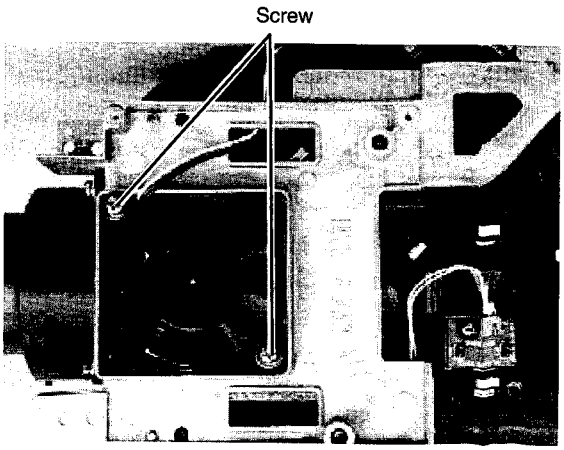


Fig. 3-41

1. Remove the 2 mounting screws and then remove the cooling fan.

Cautions:

* **The cooling and exhaust fans can be removed for cleaning. Do not disassemble anything other than the fan.**
* **When re-installing the cooling fan, install with the marking surface (aluminum diecast side) at the bottom and the cable routing as shown in the photo. Always clean the fan to remove all soiling.**

Exhaust fan

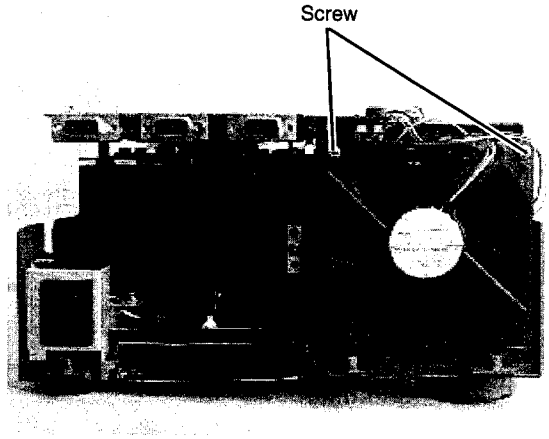


Fig. 3-42

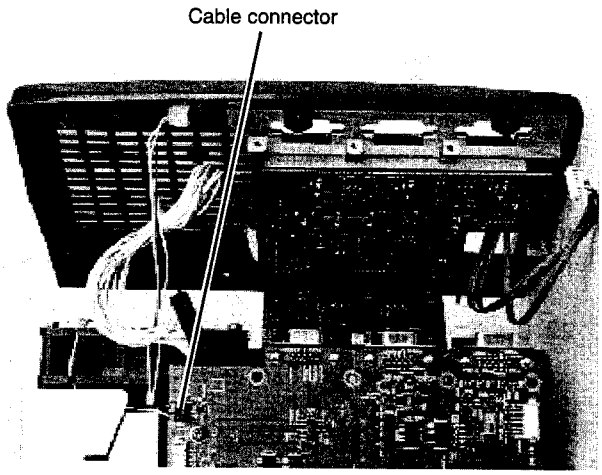


Fig. 3-43

1. Disconnect the cable from the main board assembly connector CN806.
2. Remove the 2 exhaust fan mounting screws.
3. Remove the exhaust fan.

Cautions:

* **When re-installing the exhaust fan, make sure that it is installed facing in the correct direction. Installing the exhaust fan facing in the wrong direction can cause overheating which in turn can result in damage or malfunction. The exhaust fan should be positioned with the marking label facing outward.**
* **The exhaust fan and peripheral components are easily soiled by dust, etc. Check for soiling when removing or re-installing the exhaust fan, and clean if necessary.**

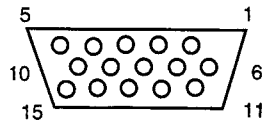
4. Explanation of Abbreviations

Page	Abbreviation	Function
2-4	A 0-7	: CPU address bus
	AD 8-23	: Address data bus
	MAC 8-23	: Mouse operation unit control addresses
	XA 0-7	: CPU address bus
	XD 0-7	: CPU data bus
	MD 0-95	: Memory data bus
	MA 0-19	: Memory address signal output by CPU
	RSA / CAS	: Memory access signal
	RDI 0-7	: Red display data input : input to video controller from SRAM
	GDI 0-7	: Green display data input : input to video controller from SRAM
	BDI 0-7	: Blue display data input : input to video controller from SRAM
	RD 0-7	: Red display data output
	GD 0-7	: Green display data output
	BD 0-7	: Blue display data output
	PDA 0-23	: CPU port A data bus
	PDB 0-23	: CPU port B data bus
	PDA 0-15	: CPU port A data bus
	ADC	: A/D converter
	OSC	: Oscillator
2-6	RD 0-7	: Red display data output
	GD 0-7	: Green display data output
	BD 0-7	: Blue display data output
	RPD 10-17	: Red display data output
	RQD 10-17	: Red display inversion data output
	GPD 10-17	: Green display data output
	GQD 10-17	: Green display inversion data output
	BPD 10-17	: Blue display data output
	BQD 10-17	: Blue display inversion data output
	SCL / SDA	: 8hc DAC control clock/serial data(flicker data)
	LCCOM	: Flicker control circuit
2-7	SCL / SDA	: Audio signal output select serial clock/data
	SPAC 0/1	: Audio adjust (mute - maximum) signal
	SPL / R	: Built-in speakers L/R
2-10	EXT. SP	: External speaker
2-11	LPCTL	: Light source lamp status detect signal
	LSTAT	: FU board fuse status detect signal
	BACT	: Light source ON/OFF control signal
	LPST	: Light source ON/OFF status

5. INTERFACE SPECIFICATIONS

5-1. Computer In 1/2 Interface

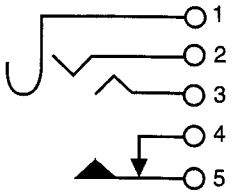
Computer Video Input Dsub15 (HD)



Pin no.	Terminal name	Pin no.	Terminal name
1	Red	9	+5V
2	Green	10	Sync GND
3	Blue	11	Monitor bit ID bit 0
4	Monitor bit ID bit 2	12	SDA
5	GND	13	Horizontal sync
6	Red GND	14	Vertical sync
7	Green GND	15	SCL
8	Blue GND		

5-2. Audio In (Computer Audio Input) 1/2 Interface

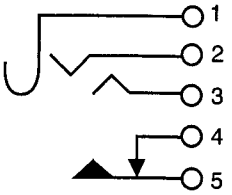
Stereo Mini-jack (includes 2 detection pin circuits)
(A detection pin is not necessary but a detection pin that can also be used as the audio out terminal has been provided.)



Pin 1 : GND
Pin 2 : computer audio input L
Pin 3 : computer audio input R
Other pins : NC

5-3. Audio Out (Audio Output) Interface

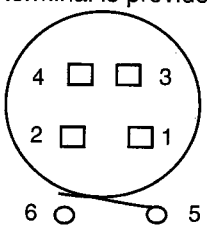
Stereo Mini-jack (includes 2 detection pin circuits)



Pins 1 / 4 : GND
Pin 2 : audio output L
Pin 3 : audio output R
Pin 5 : line out jack insert detection
Other pins : NC

5-4. S-Video Interface

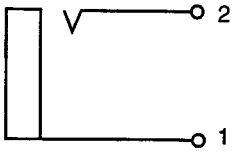
4-pin mini-DIN detection terminal is provided.



Pins 1 / 2 / 6 : GND
Pin 3 : Y signal input
Pin 4 : C signal input
Pin 5 : input detection terminal

5-5. Video In Interface

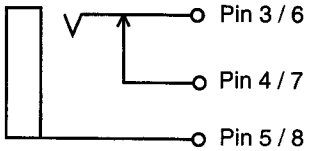
RCA gold plated part (plug insertion surface only)
Color: yellow



Pin 1 : GND
Pin 2 : video input

5-6. Audio In L/R (Video Audio Input) Interface

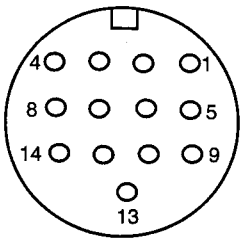
RCA gold plated part (plug insertion surface only)
Colors: L = white / R = red



Pins 3 / 6 : GND
Pin 4 : audio R return
Pin 5 : audio input L
Pin 7 : audio L return
Pin 8 : audio input R

5-7. Mouse/Com 1/2 Interface

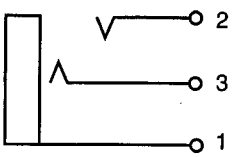
Multi-mouse jack
13-pin jack



The Mouse/Com/2 interface is as shown below. The meanings of the pins differ depending on the mode used.

Pin	PS / 2Mouse	Mac. Mouse
1	XA	XA
2	XB	—
3	—	—
4	—	—
5	LEFT	—
6	—	LEFT
7	—	—
8	—	—
9	—	—
10	—	—
11	—	—
12	PCV (+5V)	PCV (+5V)
13	GND	GND

5-8. Remote Control Interface



Pin 1 : GND
Pin 2 : serial data
Pin 3 : +5V

6. CLEANING INSIDE THE PRISM DUCT / IDENTIFYING DEFECTIVE LCD PANELS

6-1. Cleaning Inside the Prism Duct

In the event that dust adheres to optical components such as the LCD panels, etc., inside the prism duct and adversely affects the projected image, use the following method to remove the dust.

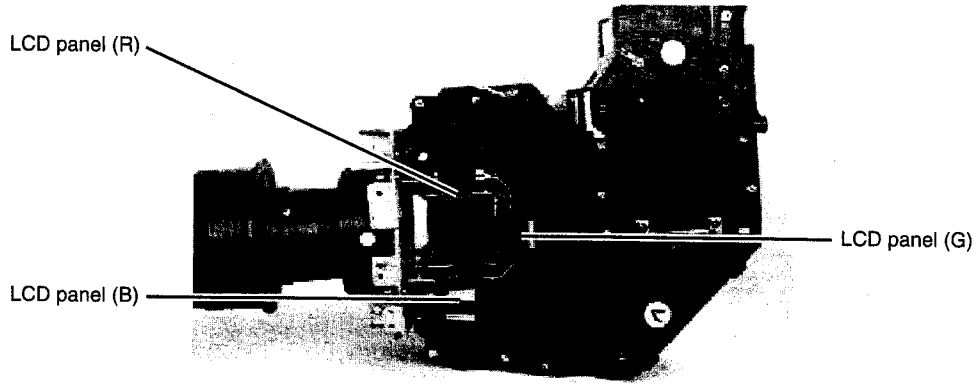


Fig. 6-1

(1) Project an image (pure white is preferable) and adjust the focus so that the pixels of the LCD panels are visible. If the presence of dust can be detected at this time, it should be removed because it could adversely affect projected images.
When projecting a pure white signal to check for dust, use the following method to determine to which LCD panel the dust is adhered. (This is sometimes difficult to determine, depending on the size of the dust particles, etc. In such cases, clean all of the LCD panels.)
- When dust is adhered to the surface of the R (red) LCD panel, the shadow of the dust will be projected as cyan.
- When dust is adhered to the surface of the G (green) LCD panel, the shadow of the dust will be projected as magenta.
- When dust is adhered to the surface of the B (blue) LCD panel, the shadow of the dust will be projected as yellow.

(2) Remove the prism duct, referring to the disassembly and reassembly procedures. Before removing the screws fastening the prism duct, clean around the prism duct area using a vacuum cleaner, etc. If there is dust around the intake fan, remove the optical engine from the bottom chassis and clean with a vacuum cleaner, etc. If cleaning is performed without first removing the dust around the prism duct and cooling fan, the dust will migrate to the optical engine.

(3) Remove the prism duct and clean with a vacuum cleaner, etc., if there is any dust.

(4) Blow off any dust adhered to the LCD panels with an air blower. If cleaning of the prism duct is difficult, remove the cooling fan and clean the prism duct from the rear.

Cautions:

* **Do not use a cotton swab wet with solvent to clean. This will cause unevenness in the surfaces of the LCD panels and cause uneven colors in the projected images.**
* **Tiny dots (missing pixels, etc.) may appear on the LCD panels but these are not defects. Check the projected images carefully to distinguish these dots from dust.**

6-2. Identifying Defective LCD Panels

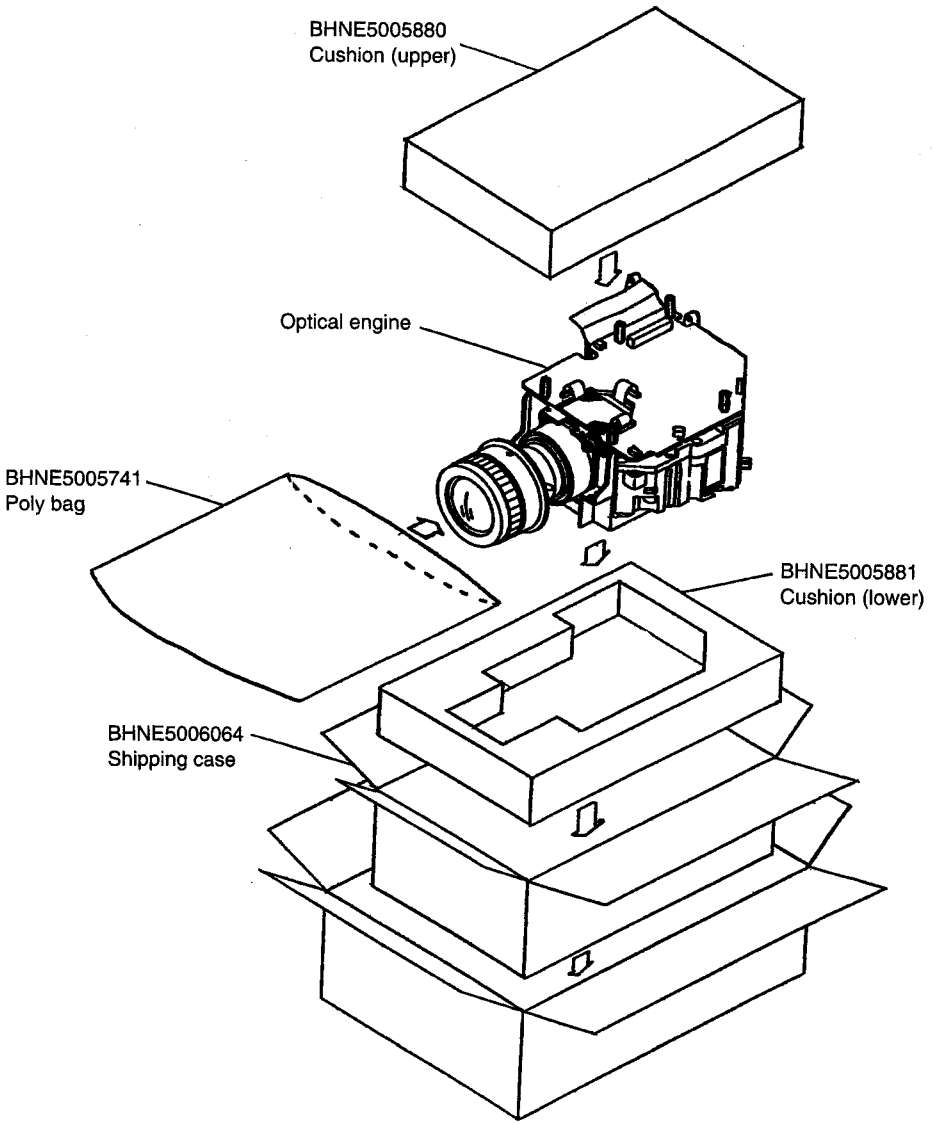
The LCD panel used in this projector is of the normally white type which transmits light when there is no drive signal input. Use the following as reference for identifying defective LCD panels.

(1) When all panels appear white
- If there is a defect in the R LCD panel, the defective part will appear cyan.
- If there is a defect in the G LCD panel, the defective part will appear magenta.
- If there is a defect in the B LCD panel, the defective part will appear yellow.

(2) When all panels appear black
- If there is a defect in the R LCD panel, the defective part will appear red.
- If there is a defect in the G LCD panel, the defective part will appear green.
- If there is a defect in the B LCD panel, the defective part will appear blue.

7. OPTICAL ENGINE PACKING CARTON

This special packing carton is for use in shipping the optical engine. Always use this carton when shipping the optical engine.



Method of Use

(1) Remove the following parts from the optical engine. (Do not remove any other parts (cooling fan, board spacer, cable assembly H, etc.).)
- exhaust fan
- exhaust fan mounting screws
- exhaust mesh A
- lamp inner housing
- supporter

(2) Put the optical engine into a poly bag.
(3) Place the optical engine on cushion (lower) and then place cushion (upper) over it.
(4) Attach Parts Repair Order Form of LX-D500, LX-D700" with the necessary items filled in to the cover of the shipping case and then tape the cover.
(5) Double-pack by placing the shipping case into a slightly larger case.

Cautions:

* **Before shipping the optical engine, It is necessary to first prepare a shipping case.**
* **Always double-pack to avoid damage during shipping.**
* **Store the parts removed from the optical engine in a safe place until the optical engine repairs have been completed.**

8. TROUBLESHOOTING

8-1. Before Starting Troubleshooting

(1) When making repairs by replacing parts, always recheck the replaced parts to make sure that they are indeed defective. (To distinguish problems such as those caused by poor connector contact, etc.)
(2) Always use the check items in the flow chart.
(3) Follow the disassembly and reassembly procedures when replacing parts.
(4) Always make sure the connectors, etc., are correctly connected before checking operation.

8-2. Equipment and Supplies for Troubleshooting

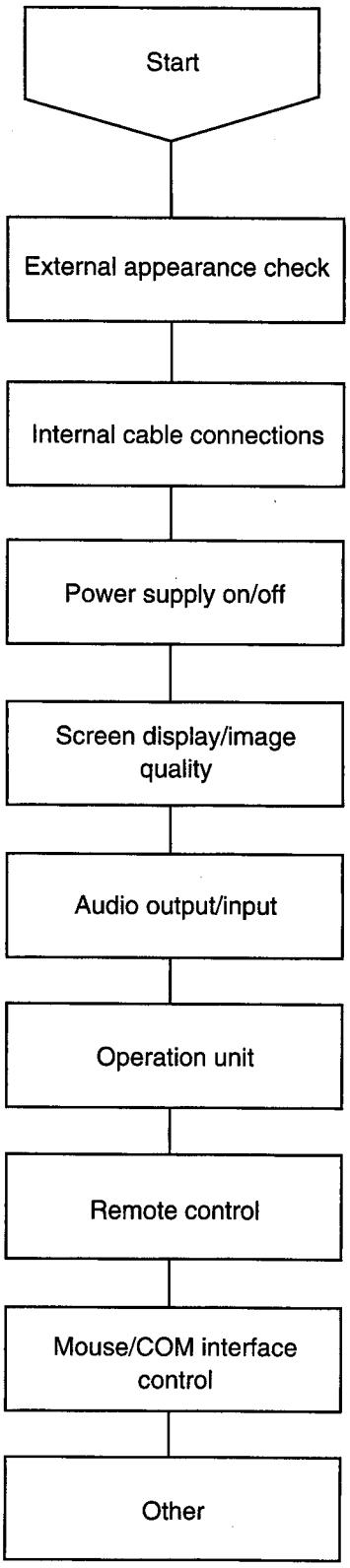
- Projection screen: for image projection.
- Measuring scale (3m): for measuring projection distance.
- Personal computer (refer to the instruction manual for the required resolution and frequency, etc.): for audio signal, video signal output.
- Color display: for personal computer operation and for display comparisons.
- Video equipment: for testing
- External speakers: for audio output testing (must have an audio cable connection terminal).
- Multi-tester: for measuring resistance values and voltages (AC/DC).
- Ordinary tools and supplies: as indicated in the disassembly and reassembly procedures.

8-3. Parts Replacement in the Field

- When replacing parts while troubleshooting functional failures, replace parts as the units shown in the parts list.
- When driver board assembly (optical engine) replacement is indicated, make sure that the fuse on the board is not blown. If a blown fuse is discovered by any chance, replace the fuse and check the functions before replacing the board.
- The optical engine (includes the optical block, driver board assembly) is a single service unit. Do not disassemble or reassemble the various units inside.

8-4. Entry

Troubleshoot in accordance with the flow chart shown below and advance to the other flow charts on the following pages as indicated.



- External appearance check
  Check for the existence of problems such as cover dents, etc.

- Internal cable connection check
  Remove the top cover assembly and check the cable connector connections, including the C. board cable assembly and remote board assembly.

- Power supply on/off
  Connect the power cable to the main unit, turn the power on and check the initialization operation until the "NO SIGNAL" display appears and the power turns off.

- Screen display/image quality check
  Check the display and image quality of each signal input from Computer In 1/2 and Video. Check R/G/B output to the externally connected monitor.

- Audio output/input check
  Check the Audio In 1/2 inputs from computer and Audio In L/R inputs from Video. Check Audio Out connections to external equipment.

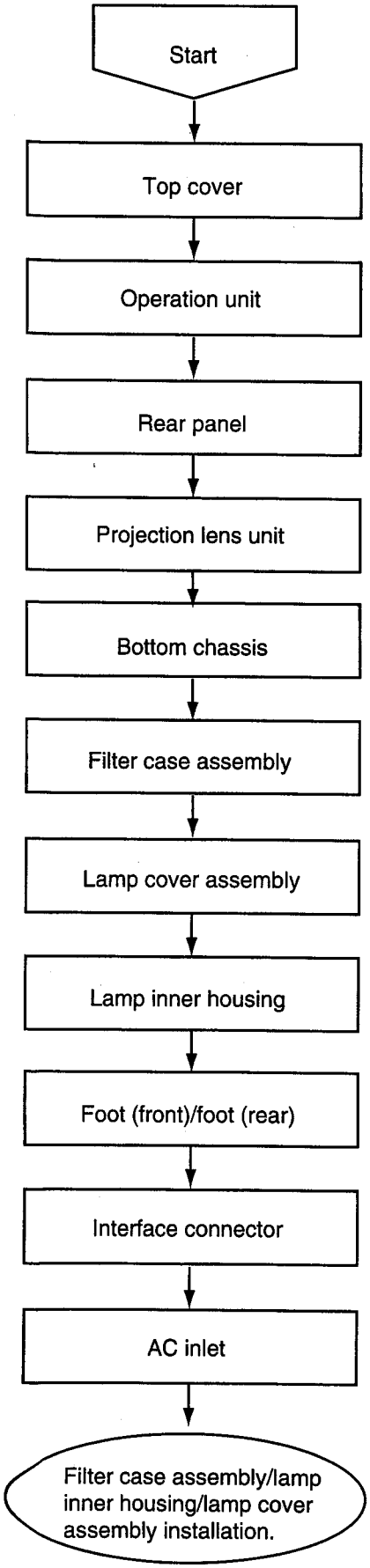
- Operation unit operation check
  Check the function of each operation unit button.

- Remote control operation 1
  Check the function of each remote control button.

- Remote control operation 2
  Check personal computer remote control operation. (Effective only when using the mouse serial cable.)

- Other
  Check for problems such as abnormal noise, abnormal heat, intermittent malfunction, etc.

External Appearance Check



Turn off the power supply and disconnect the power cable and all connecting cables before starting the checks.

- Is there any damage, deformation or cracking caused by dropping?
- Is the top cover correctly fastened to the bottom chassis with screws?
- Is any dirt or foreign matter (tape, etc.) adhered to the IR receptors (front panel and rear panel)?

- Is the top cover correctly installed?
- Are there any buttons that remain pushed down?

- Is there any damage, deformation or cracking caused by dropping?
- Are the top cover and bottom chassis correctly installed?

- Do the focus and zoom rings rotate smoothly?
- Is the lens soiled or damaged?

- Is there any damage, deformation or cracking caused by dropping?

- Is the filter case assembly correctly fastened to the bottom chassis with screws? Are there any loose screws?
- Is the protuberance that presses down the filter cover of the air filter assembly damaged?
- Is the filter soiled?
- Is the intake fan (below the filter case assembly) dirty?

- Are there any loose screws?
- Is the protuberance that pushes up the inter-lock switch of the lamp cover assembly damaged?

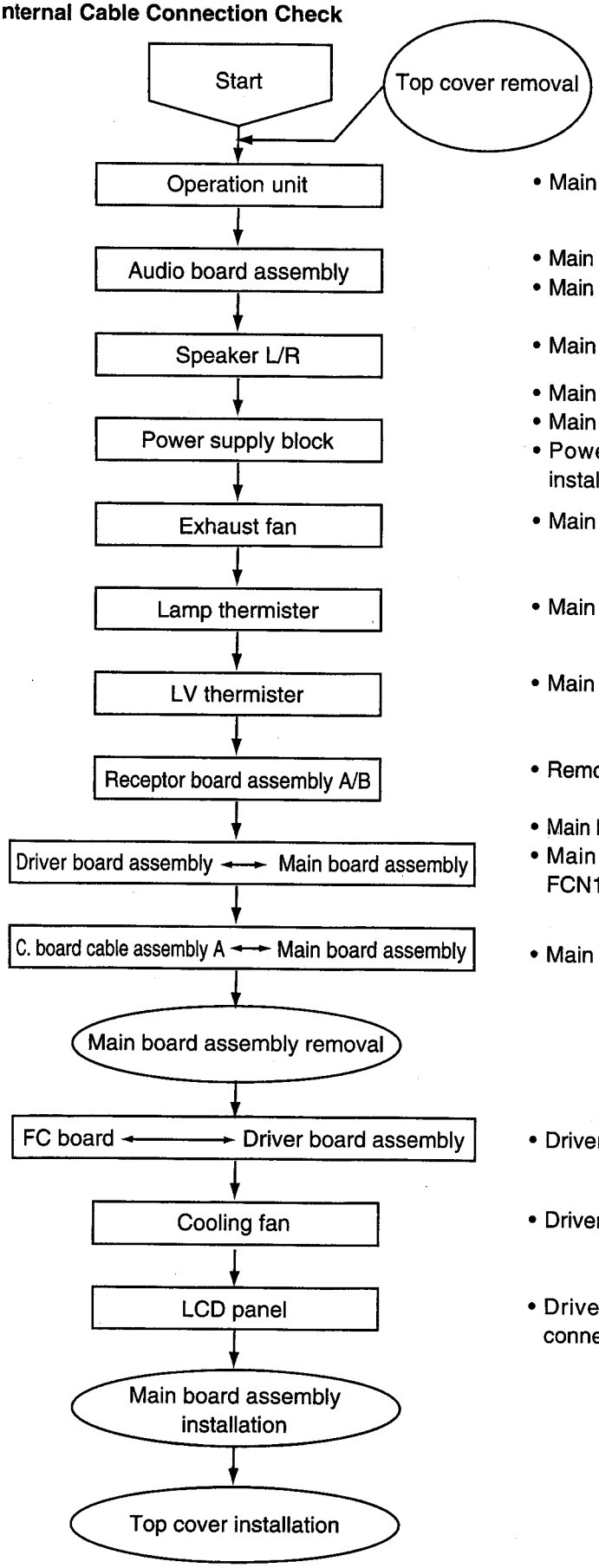
- Is there any sign of deformation or burning (discoloration) of the plastic frame?
- Is the power supply connector discolored?
- Are the lamp reflector and surroundings soiled?
- Are the FU board terminals soiled or discolored?

- Can foot (front) and foot (rear) be adjusted smoothly?

- Are the connectors and terminals on the rear panel deformed or discolored?
- Is any foreign matter adhered to the connectors and terminals?

- Are the connector terminals discolored?
- Is the socket damaged?

Internal Cable Connection Check

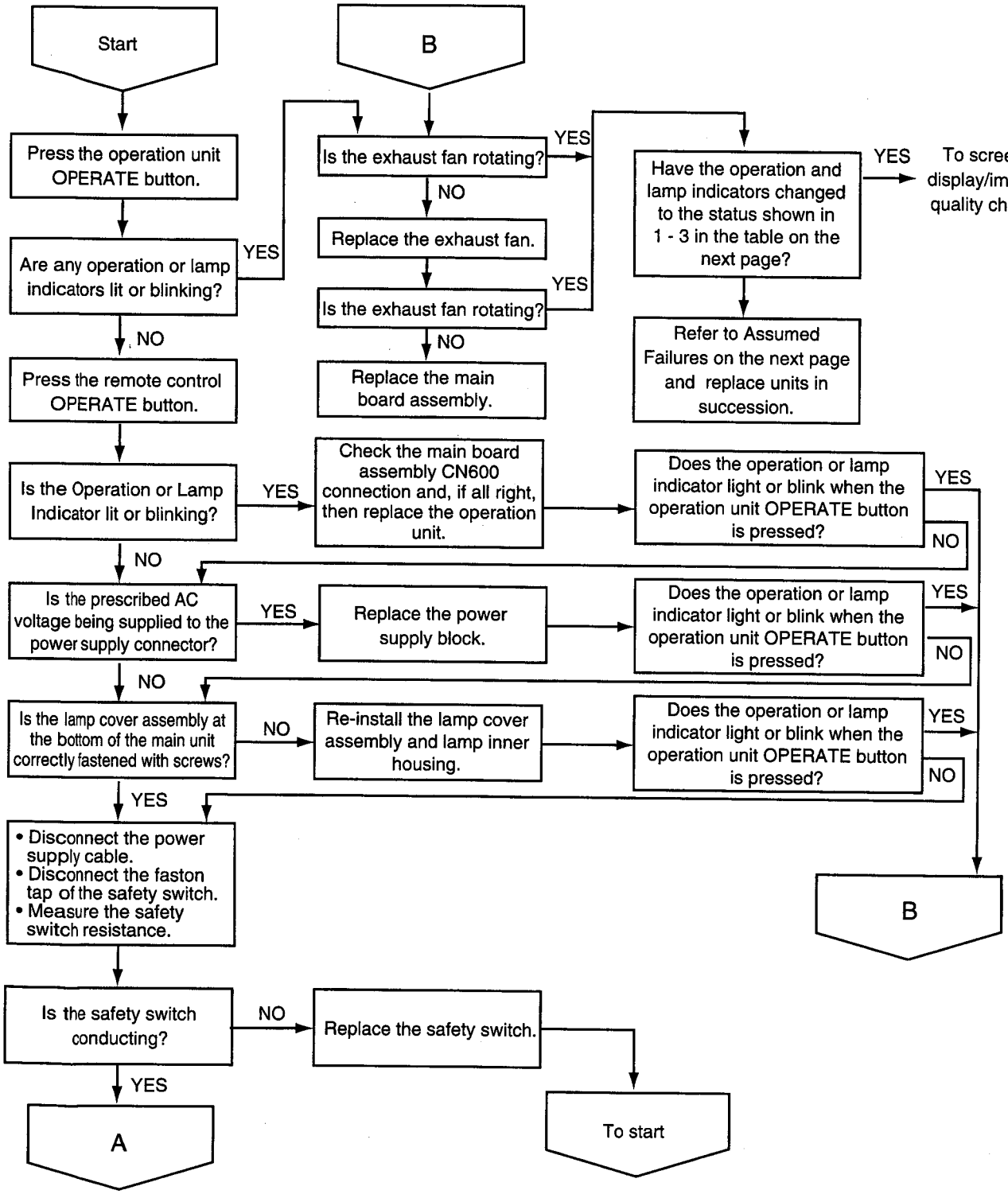


Turn off the power supply and disconnect the power cable and all connecting cables before starting the checks.

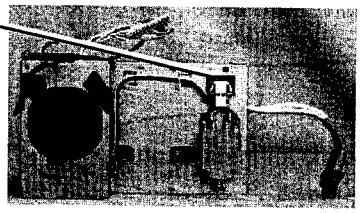
- Main board assembly CN600 (lock type connector)
- Main board assembly CN300 ⟷ Audio board assembly CN101
- Main board assembly CN603 ⟷ Audio board assembly CN100
- Main board assembly CN601/CN602
- Main board assembly CN800 ⟷ Power supply block
- Main board assembly CN860 ⟷ PBS thermister
- Power supply block ⟷ Lamp inner housing connector installation (screw fastened)
- Main board assembly CN806
- Main board assembly CN804
- Main board assembly CN803
- Remote control receptor board assembly A/B connectors
- Main board assembly CN805 ⟷ Driver board assembly CN251
- Main board assembly CN700 ⟷ Driver board assembly FCN100 (connector connection)
- Main board assembly CN802
- Driver board assembly CN250
- Driver board assembly CN252
- Driver board assembly CN700/CN800/CN900 (lock type connectors)

Power supply on/off

Connect the power supply cable to the main unit and remove the lens cover.
Disconnect all cables connecting external equipment.

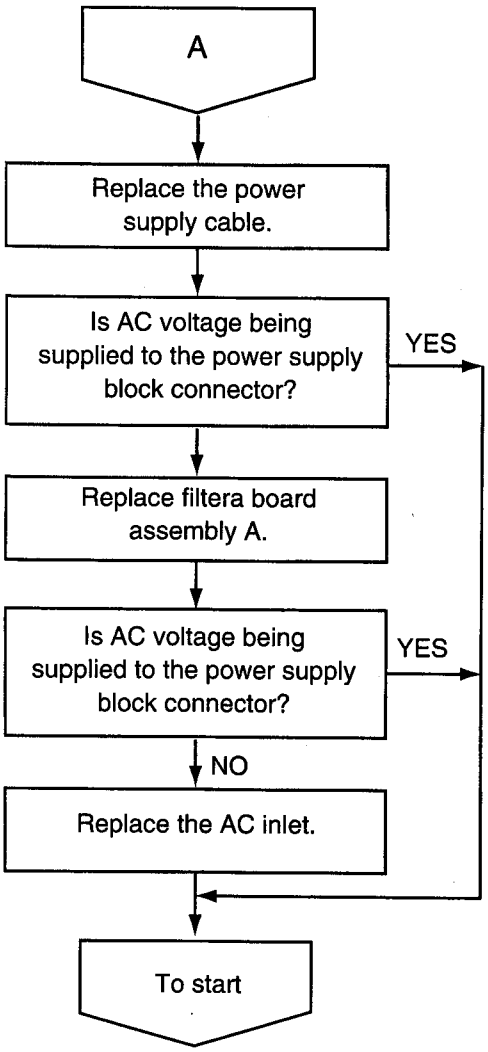

Start
Press the operation unit OPERATE button.
Are any operation or lamp indicators lit or blinking?
YES
NO
Press the remote control OPERATE button.
Is the Operation or Lamp Indicator lit or blinking?
YES
NO
Is the prescribed AC voltage being supplied to the power supply connector?
YES
NO
Is the lamp cover assembly at the bottom of the main unit correctly fastened with screws?
NO
YES
• Disconnect the power supply cable.
• Disconnect the faston tap of the safety switch.
• Measure the safety switch resistance.
Is the safety switch conducting?
NO
YES
A
B
Is the exhaust fan rotating?
YES
NO
Replace the exhaust fan.
Is the exhaust fan rotating?
YES
NO
Replace the main board assembly.
Check the main board assembly CN600 connection and, if all right, then replace the operation unit.
Replace the power supply block.
Re-install the lamp cover assembly and lamp inner housing.
Replace the safety switch.
To start
B
Have the operation and lamp indicators changed to the status shown in 1 - 3 in the table on the next page?
YES
To screen display/image quality check.
Refer to Assumed Failures on the next page and replace units in succession.
Does the operation or lamp indicator light or blink when the operation unit OPERATE button is pressed?
YES
NO
Does the operation or lamp indicator light or blink when the operation unit OPERATE button is pressed?
YES
NO
Does the operation or lamp indicator light or blink when the operation unit OPERATE button is pressed?
YES
NO

*1: AC voltage measurement point.



*2: Measure when the safety switch resister is not hot.

Continued from the previous page.


A
Replace the power supply cable.
Is AC voltage being supplied to the power supply block connector?
YES
Replace filtera board assembly A.
Is AC voltage being supplied to the power supply block connector?
YES
NO
Replace the AC inlet.
To start

<Descriptions of possible malfunctions ①>

Status	Lamp indicator	Operation indicator	Significance/Cause
1	Goes out	Lights	Initial operation immediately after power on.
2	Blinks green	Lights green	Warm-up operation (continues approx. 30 sec.)
3	Lights green	Lights green	During projection
4	Blinks orange	Lights orange	Cool down operation (continues approx. 60 sec.)
5	Goes out	Lights orange	Standby status (end of cool down)
6	Goes out	Goes out	Power off
7	–	Lights red or blinks orange	Abnormal temperature
8	–	Blinks red	Internal malfunction
9	Lights red and orange alternately	–	Lamp used more than 1,900 hours
10	Lights red	–	Lamp service life
11	Blinks red	–	Lamp malfunction or power supply block malfunction

(1) When the status 1 or status 8 display continues
- Malfunction caused by the main board assembly, driver board assembly (optical engine) or power supply block.

(2) When the status 2 display continues or the time required is extremely long
- Malfunction caused by the main board assembly, power supply block or lamp inner housing.

(3) When the status 4 display continues or the time required is extremely long
- Malfunction caused by the exhaust fan, fan thermister or main board assembly.

(4) When power on is not possible in status 6 (both indicators go out)
- Malfunction caused by the AC power supply input, power supply block (with interlock switch), safety switch, main board assembly, filter board assembly A or AC inlet.

(5) When the status 7 display continues or appears occasionally during usage
- Malfunction caused by filter case assembly soiling, exhaust fan, thermister (LV, PBS, lamp), power supply block or main board assembly.

(6) When status 9 or status 10 display continues
- Replace the lamp inner housing because the lamp inner housing service life or replacement period has been exceeded. If the lamp indicator still lights red even after lamp inner housing replacement, the FC board mounted below the optical engine may be defective.

(7) When the status 10 display continues
- Malfunction caused by the lamp inner housing or power supply block.

Screen Display/Image Quality

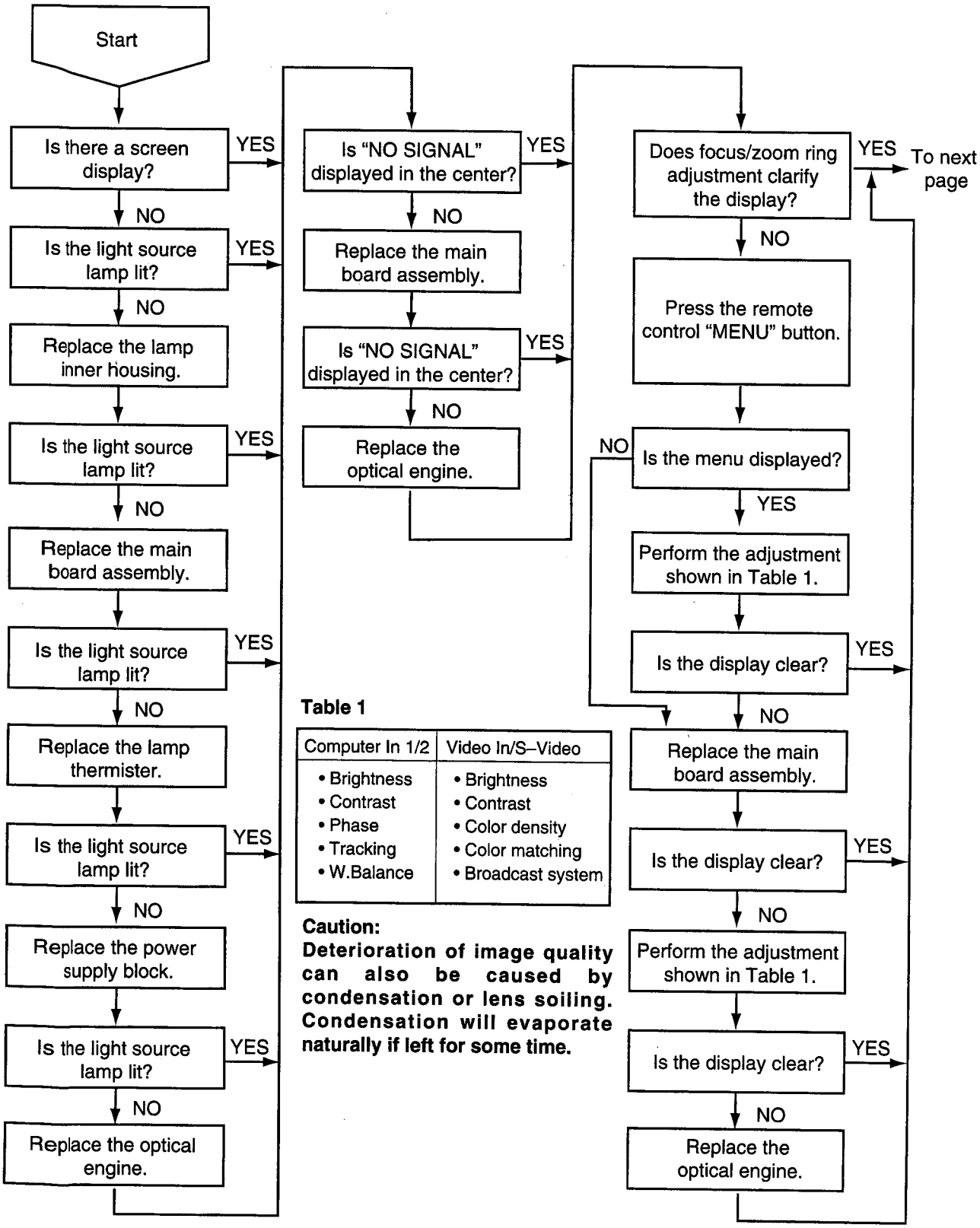
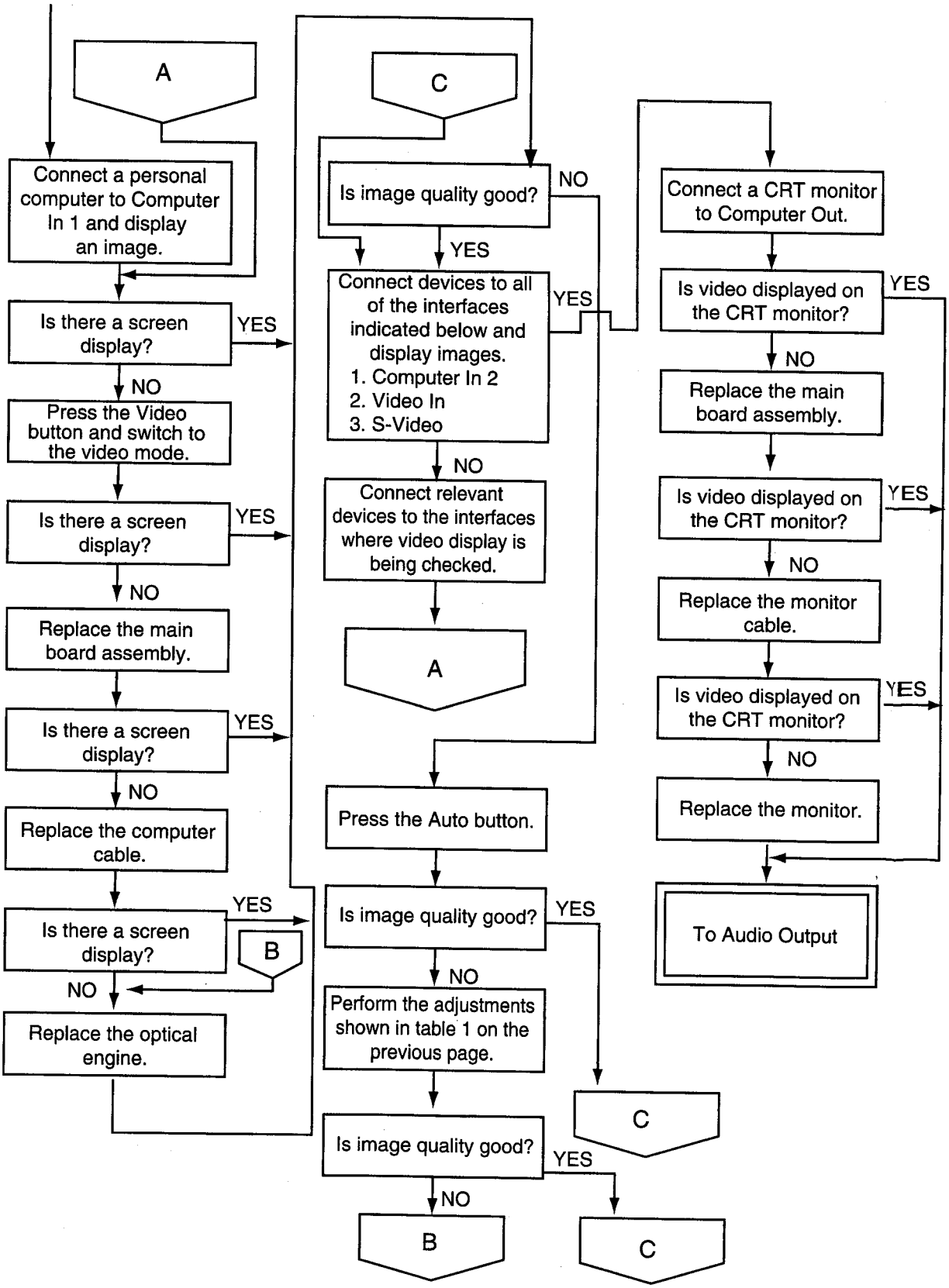


Table 1

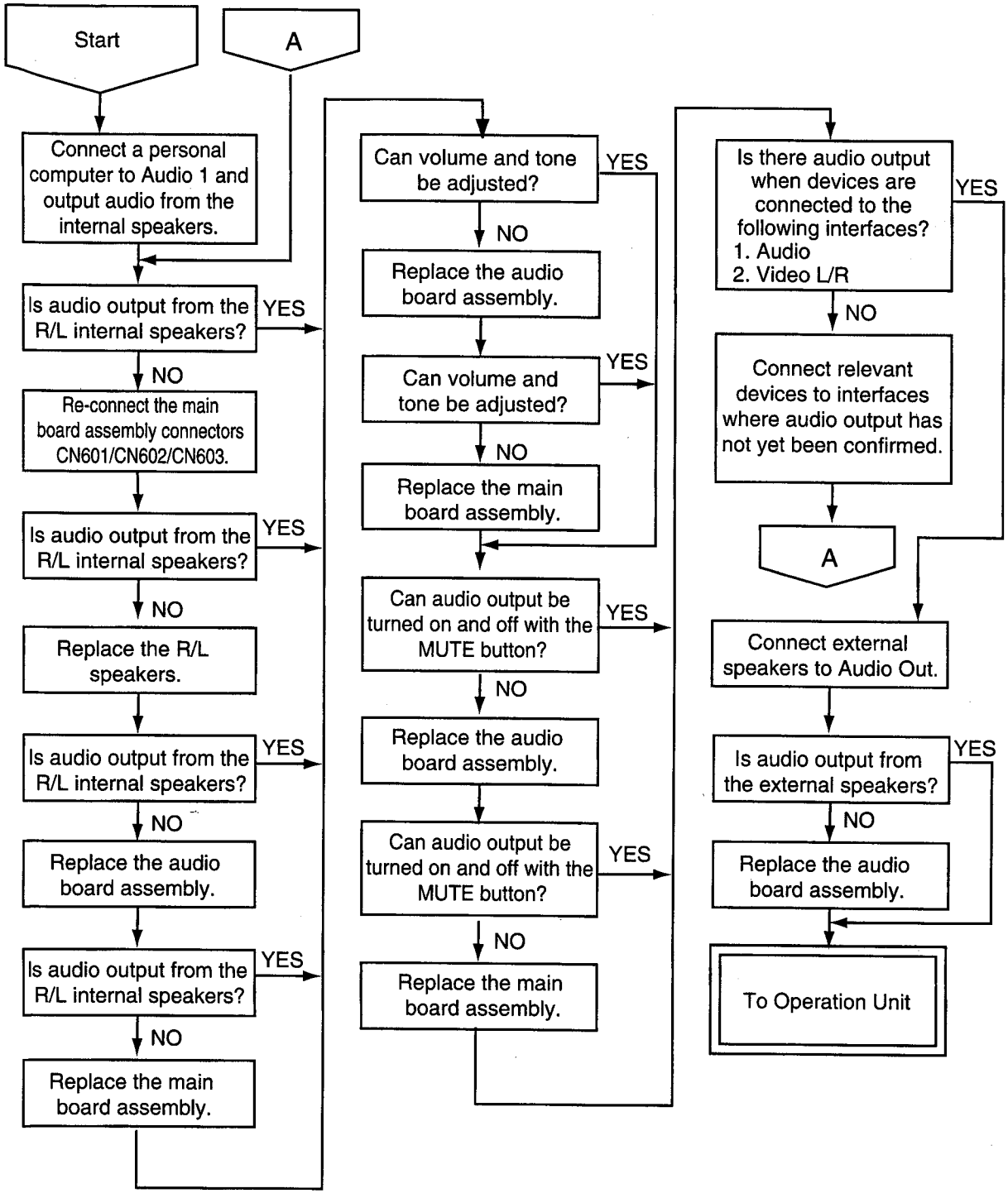
Computer In 1/2	Video In/S-Video
• Brightness • Contrast • Phase • Tracking • W.Balance	• Brightness • Contrast • Color density • Color matching • Broadcast system

Caution:
Deterioration of image quality can also be caused by condensation or lens soiling. Condensation will evaporate naturally if left for some time.

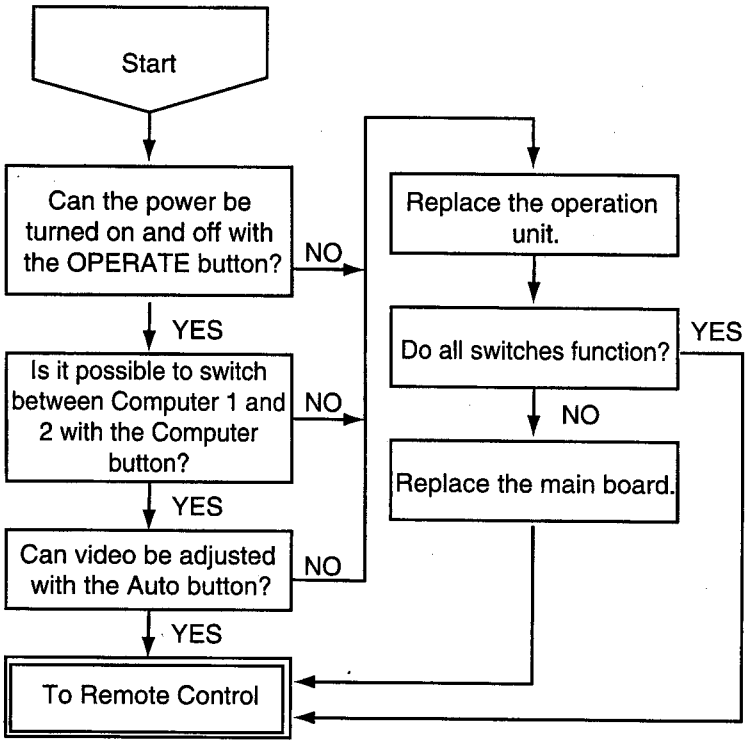
Continued from the previous page (Screen Display/Image Quality)



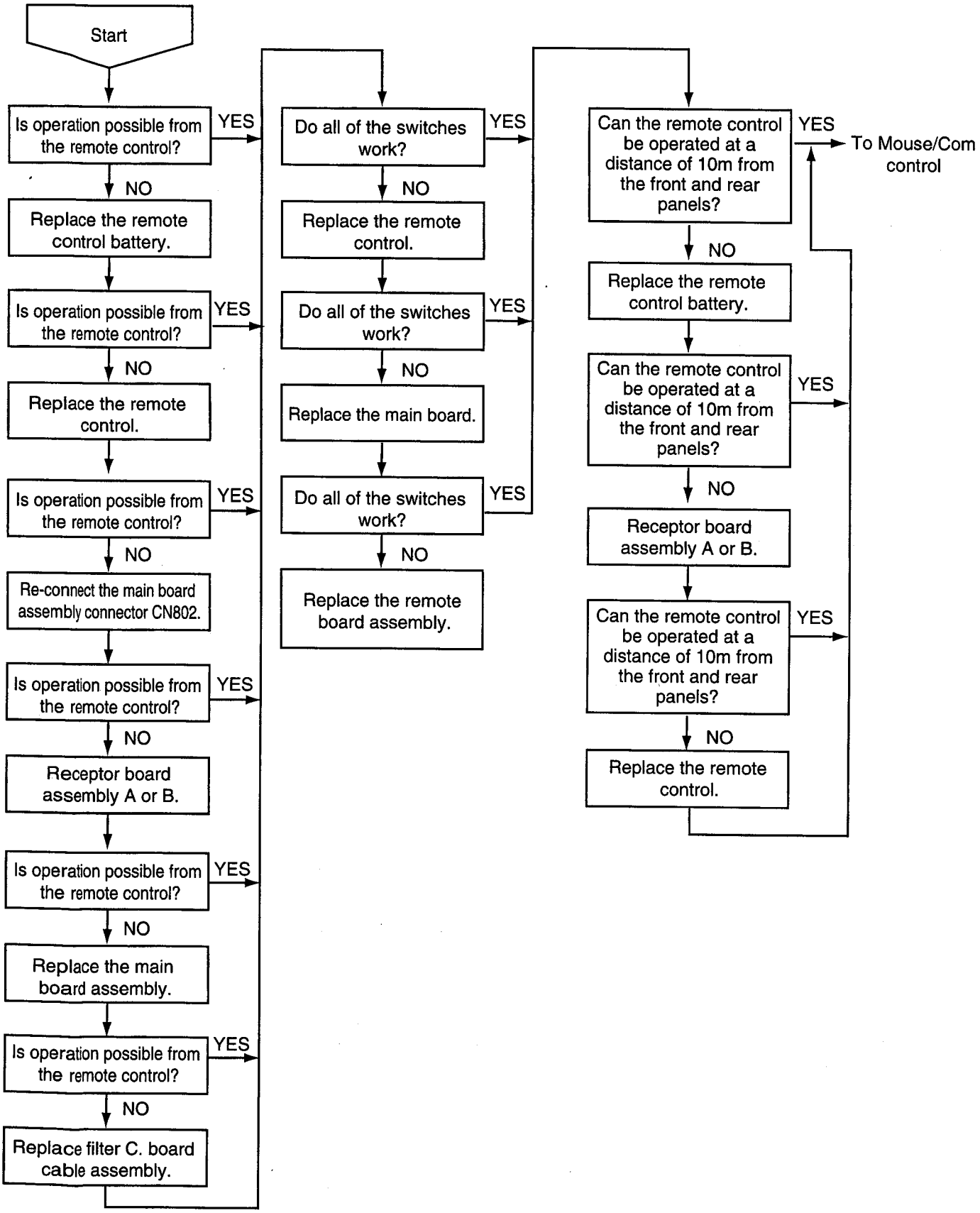
Audio output


Start
A
Connect a personal computer to Audio 1 and output audio from the internal speakers.
Is audio output from the R/L internal speakers?
YES
NO
Re-connect the main board assembly connectors CN601/CN602/CN603.
Is audio output from the R/L internal speakers?
YES
NO
Replace the R/L speakers.
Is audio output from the R/L internal speakers?
YES
NO
Replace the audio board assembly.
Is audio output from the R/L internal speakers?
YES
NO
Replace the main board assembly.
Can volume and tone be adjusted?
YES
NO
Replace the audio board assembly.
Can volume and tone be adjusted?
YES
NO
Replace the main board assembly.
Can audio output be turned on and off with the MUTE button?
YES
NO
Replace the audio board assembly.
Can audio output be turned on and off with the MUTE button?
YES
NO
Replace the main board assembly.
Is there audio output when devices are connected to the following interfaces?
1. Audio
2. Video L/R
YES
NO
Connect relevant devices to interfaces where audio output has not yet been confirmed.
A
Connect external speakers to Audio Out.
Is audio output from the external speakers?
YES
NO
Replace the audio board assembly.
To Operation Unit

Operation Unit

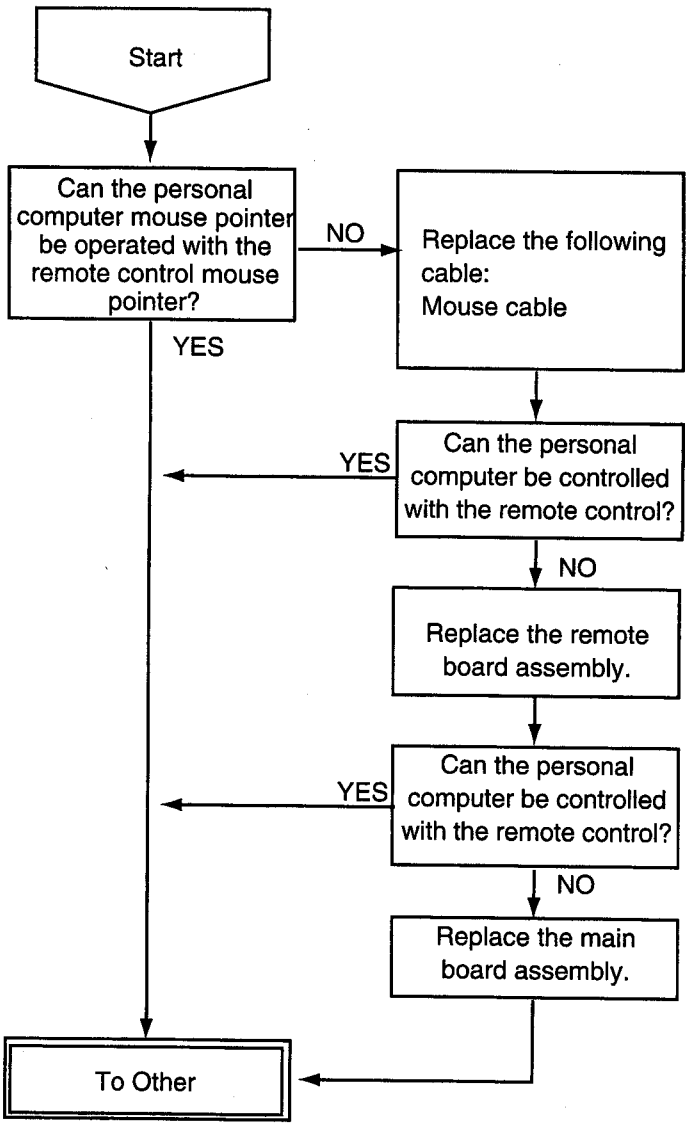


Remote Control

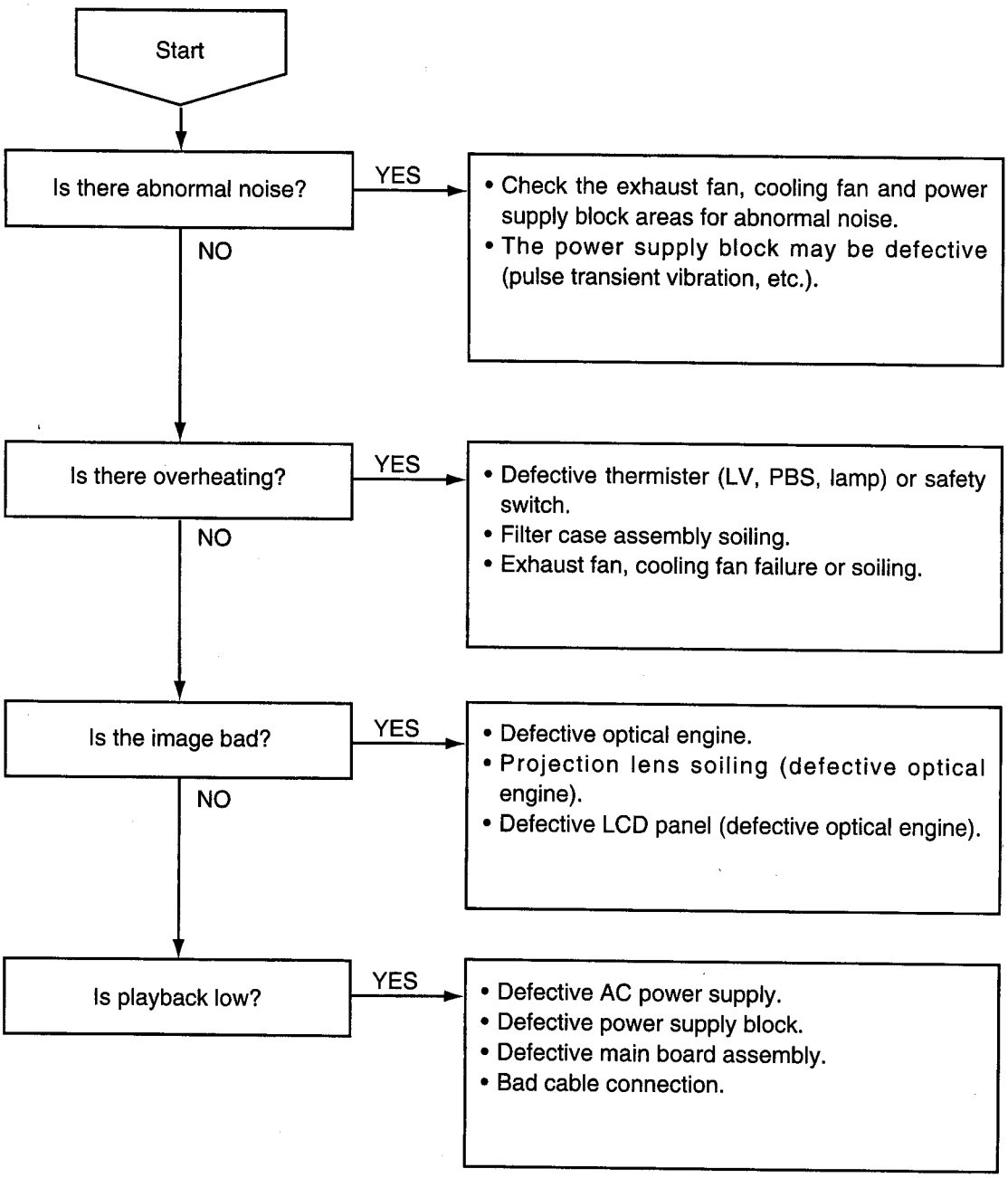

Start
Is operation possible from the remote control?
YES
NO
Replace the remote control battery.
Is operation possible from the remote control?
YES
NO
Replace the remote control.
Is operation possible from the remote control?
YES
NO
Re-connect the main board assembly connector CN802.
Is operation possible from the remote control?
YES
NO
Receptor board assembly A or B.
Is operation possible from the remote control?
YES
NO
Replace the main board assembly.
Is operation possible from the remote control?
YES
NO
Replace filter C. board cable assembly.
Do all of the switches work?
YES
NO
Replace the remote control.
Do all of the switches work?
YES
NO
Replace the main board.
Do all of the switches work?
YES
NO
Replace the remote board assembly.
Can the remote control be operated at a distance of 10m from the front and rear panels?
YES
To Mouse/Com control
NO
Replace the remote control battery.
Can the remote control be operated at a distance of 10m from the front and rear panels?
YES
NO
Receptor board assembly A or B.
Can the remote control be operated at a distance of 10m from the front and rear panels?
YES
NO
Replace the remote control.

Mouse/com

Effective only when the personal computer and main unit are connected by the accessory mouse cable (M.S cable).



Other


Start
Is there abnormal noise?
YES
• Check the exhaust fan, cooling fan and power supply block areas for abnormal noise.
• The power supply block may be defective (pulse transient vibration, etc.).
NO
Is there overheating?
YES
• Defective thermister (LV, PBS, lamp) or safety switch.
• Filter case assembly soiling.
• Exhaust fan, cooling fan failure or soiling.
NO
Is the image bad?
YES
• Defective optical engine.
• Projection lens soiling (defective optical engine).
• Defective LCD panel (defective optical engine).
NO
Is playback low?
YES
• Defective AC power supply.
• Defective power supply block.
• Defective main board assembly.
• Bad cable connection.

(Hypothetical malfunctions ②)

Symptoms and flow up to the symptoms	Indicators		On-screen	Possible cause
	Operate	lamp		
Functions with remote controller. Operation unit switch does not work.	—	—	—	Check main board assembly (CN600). Operation unit, main board assembly failure.
AC-IN OPERATE indicator lights orange→ OPERATE switch on→no operation	Blinks red	—	—	Check exhaust fan - main board assembly (CN806). Exhaust fan, main board assembly failure.
AC-IN→OPERATE indicator lights orange→ OPERATE switch on→cooling fan, exhaust fan operates, light source lamp lights→ COMPUTER-IN and AV-IN signal video projection, cursor does not move to the Video or Computer position in the On-screen Menu.	—	—	NO SIGNAL	Check audio board assembly (CN101) - main board assembly (CN300). Audio board assembly, main board assembly failure.
AC-IN→no operation	Lights orange	Lights orange	—	Check audio board assembly (CN100) - main board assembly (CN603). Audio board assembly, main board assembly failure.
AC-IN→no operation	Lights orange	Lights orange	—	Check C. board assembly (CN200) - main board assembly (CN802). C. board assembly, main board assembly failure.
AC-IN→no operation	Lights orange	Lights orange	—	Check C. board assembly (CN201) - remote board assembly (CN101). Remote board assembly is correct, C. board assembly not connected. C. board assembly, remote board assembly failure.
AC-IN→cooling fan, exhaust fan rotate no operation	Blinks red	—	—	Check lamp thermister - main board assembly (CN804). Light source lamp thermister (installed beside the safety switch in the top of the light source lamp inner housing), main board assembly failure.
AC-IN→no operation	—	—	—	Check power supply block - main board assembly (CN800). Power supply block, main board assembly failure.
AC-IN→cooling fan, exhaust fan rotate→no operation	Blinks red	—	—	Check PBS thermister - main board assembly (CN860). PBS thermister (installed beside the power supply block cooling fan), main board assembly failure.
AC-IN→OPERATE switch on→no operation	Blinks red	—	—	Check driver board assembly (CN251) - main board assembly (CN805). Driver board assembly, main board assembly failure.
AC-IN→OPERATE switch on→no operation	Blinks red	—	—	Check cooling fan - driver board assembly (CN252). cooling fan, driver board assembly failure.
AC-IN→OPERATE indicator lights orange→ OPERATE switch on→cooling fan, exhaust fan rotates, light source lamp lights, OPERATE indicator lights green, Light source lamp indicator blinks green→retry 2 times (approx. 30 sec. between retries)→after approx. 60 sec. exhaust fan stops→no operation	—	Blinks red	—	Check power supply block - lamp inner housing (light source lamp power supply connector). Lamp inner housing not correctly installed. Power supply block, lamp inner housing failure.
AC-IN→no power supply no operation	—	—	—	Check filter board assembly - safety switch, Fuse, filter board assembly, safety switch failure.
AC-IN→OPERATE indicator lights orange→ OPERATE switch on→cooling fan, exhaust fan rotate, light source lamp lights then turns off→no operation	Lights orange	Lights orange	—	Check driver board assembly (CN100) - main board assembly (CN700). Driver board assembly, main board assembly failure.
Lamp inner housing replaced but does not operate. Lamp usage time not reset.	—	Blinks red	—	Check FC PCB (CN1) - driver board assembly (CN250). FC PCB probe not correctly contacting lamp inner housing (fuse PCB).
Mechanical switch does not function. Other functions (light source lamp lighting, etc.) operate correctly. Mechanical switch: the switch that detects the air intake filter at the bottom.	—	—	—	Check mechanical switch - C. board assembly (CN202). Mechanical switch, C. board cable assembly failure. All functions other than filter detection operate correctly even with CN202 disconnected.
LV thermister does not function. Other functions (light source lamp lighting, etc.) operate correctly. LV thermister: detects the LCD panel temperature.	—	—	—	Check LV thermister - main board assembly (CN803). LV thermister, main board assembly failure. All functions other than LV thermister detection operate correctly even with CN803 disconnected.

No. 0002

JVC Manual Change Information

SUBJECT: CHANGING PARTS NUMBERS

DATE: 5 NOVEMBER 1999

■ The following parts have been changed . Please note these new parts in your service manual.
■ We suggest that you order the parts concarned as spares.

Model & Manual No.	Location	Reference Information	Performed at factory
LX-D700U/E/EK No.PA009	PACKING AND ACCESSORY ASSEMBLY <M>		

Page	Ref. No.	Part Name	Part No.	New Part No.	FOB (New Part)	Itg	Rsn	Note
3	15	PACKING CASE	BHQ30121-4	BHQ30121-5			G	

COMMENTS:

ATTACHMENT

( )NONE ( )COMPONENT/PWB LAYOUT.
( )SCHEMATIC DIAGRAM ( ) ADJUSTMENT PROCEDURE
( )EXPLODED VIEW ( ) SEE NEXT PAGE

INTERCHANGEABILITY
A. Completely interchangeable.
B. Previous part can be used for new set, but new part cannot be used for previous set.
C. New part can be used for previous set, but previous part cannot be used for new set.
D. Not interchangeable.
E. Addition.
F. Deletion

A. To improve performan E. Standardization of part
B. To improve reliability F. For your demand
C. To improve safety G Correction of misprint
D. To improve productivi H. Others

TABLE OF CONTENTS

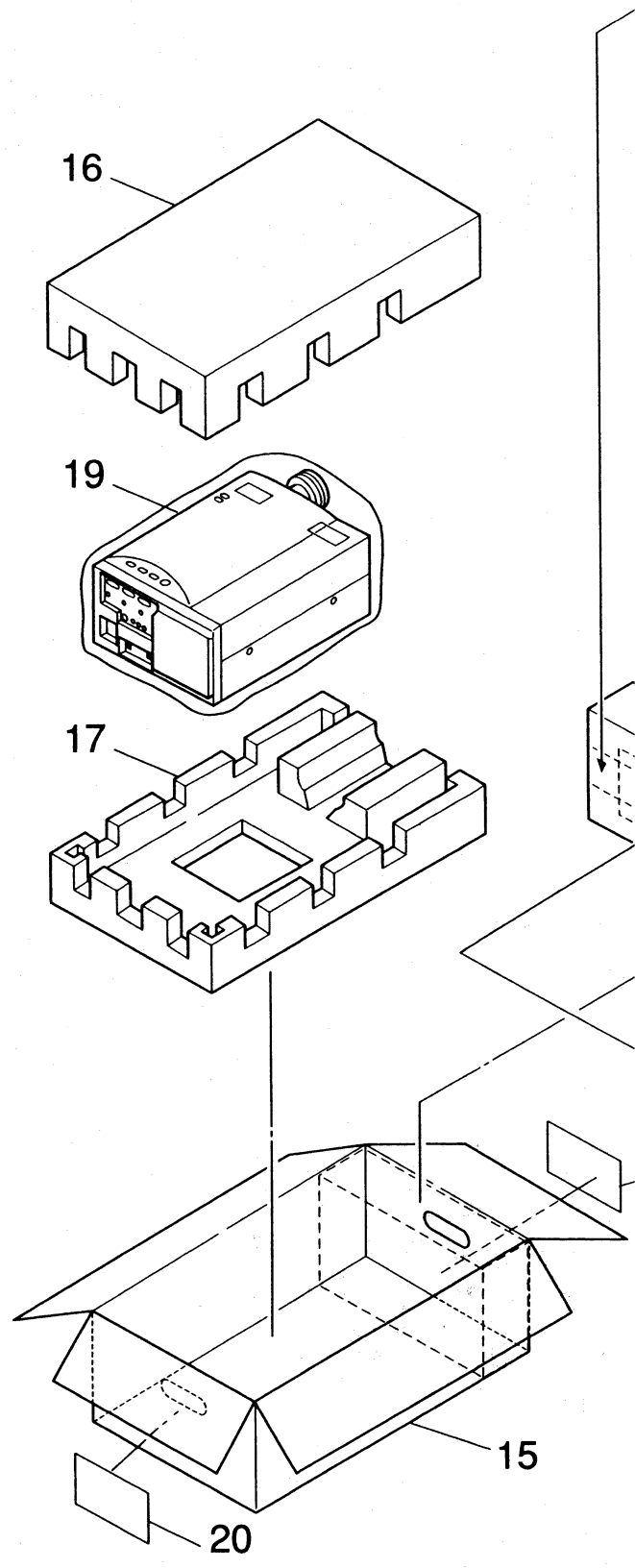
Section	Title	Page
Parts List		
1	PACKING AND ACCESSORY ASSEMBLY <M1>	2
2	FINAL ASSEMBLY <M2>	4

PARTS LIS

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. R

PACKING AND ACCESSORY ASSEMBLY <M1>



PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

PACKING AND ACCESSORY ASSEMBLY <M1>

Page

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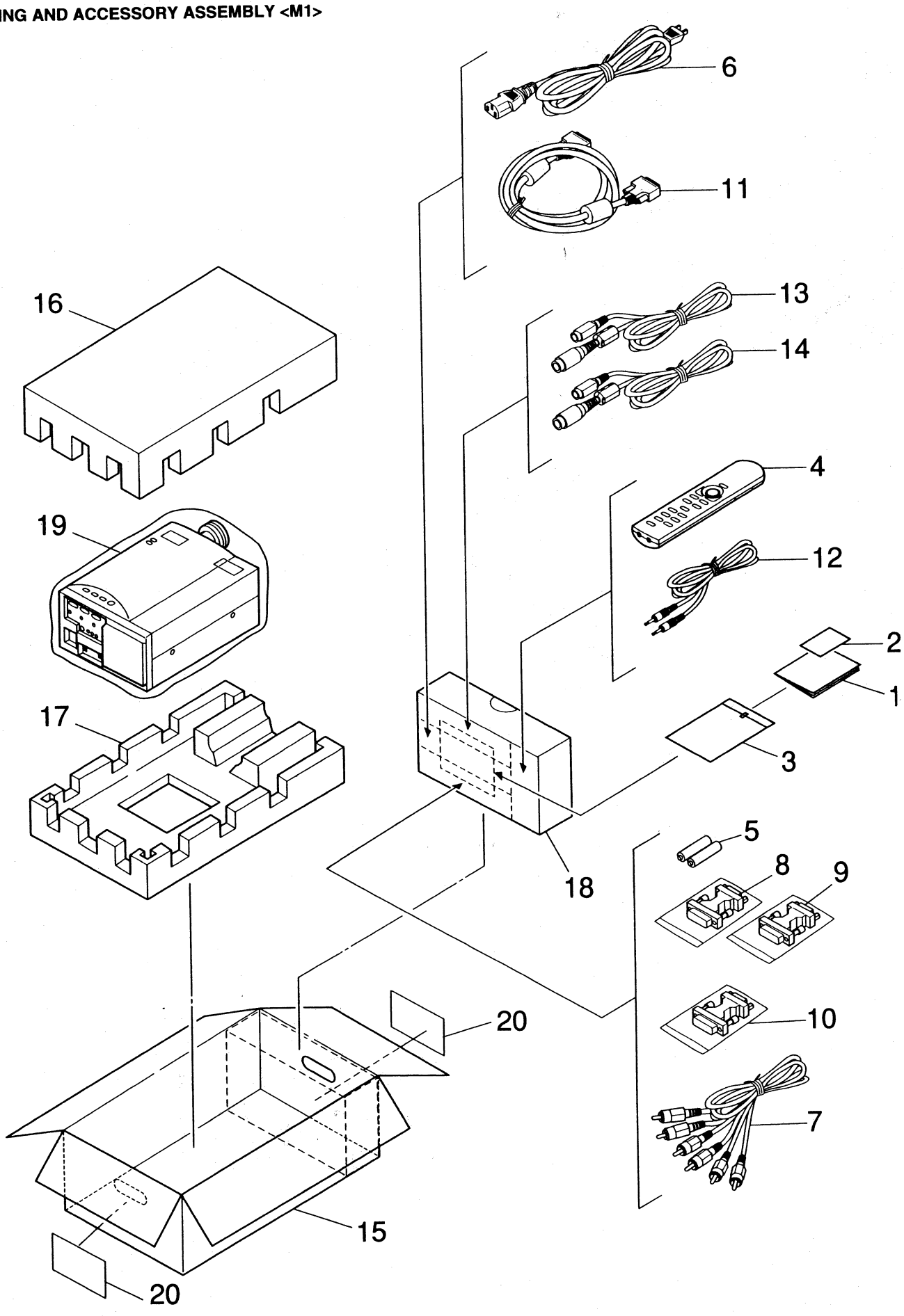
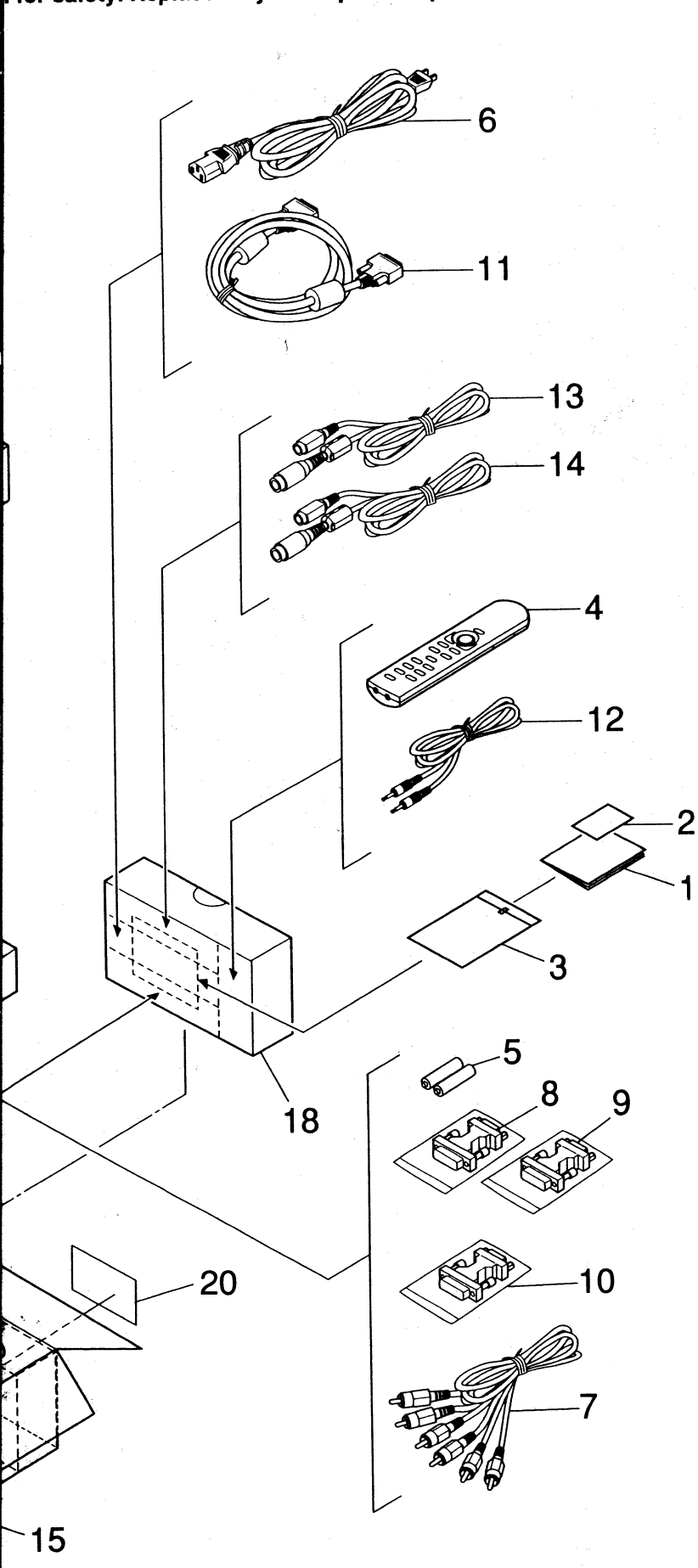


#⚠	REF NO.	PART NO.
**********		
		PACKING AND
⚠	1	BHU30004-0
		BHU30004-0
	2	–
	3	E309758-003
	4	BHD0052-1-3
	5	–
⚠	6	BHE0226
		QMP4250-25
		BHF0046
	7	BHE0227
	8	BHE0237
	9	BHE0238
	10	BHE0239
	11	BHE0061
	12	BHE0229
	13	BHE0232
	14	BHE0233
	15	BHQ30121-5
		BHQ30121-4
	16	BHD0060-1-
	17	BHD0062-1-
	18	BHD0061
	19	BHQ30126
	20	LC30450-00
		LC30451-00

ARTS LIST

l for safety. Replace only with specified part numbers.



#⚠REF NO.	PART NO.	PART NAME, DESCRIPTION

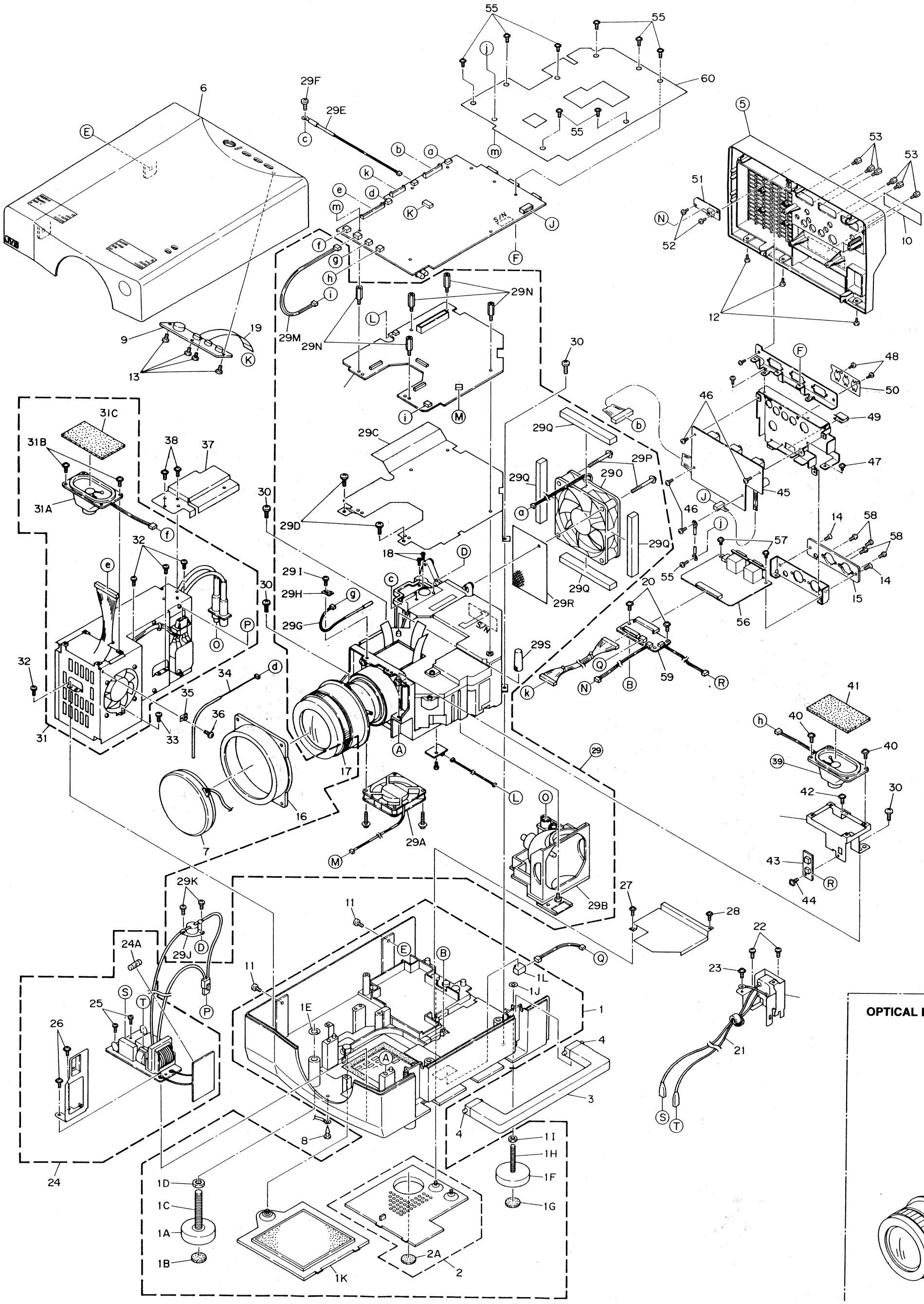
PACKING AND ACCESSORY ASSEMBLY <M1>

⚠	1	BHU30004-014	INST BOOK(LX-D700U)
		BHU30004-015	INST BOOK(LX-D700E/EK)
	2	–	WARRANTY CARD
	3	E309758-003	POLY BAG
	4	BHD0052-1-3	REMOTE CONTROLLER
	5	–	BATTERY ×2
⚠	6	BHE0226	POWER CORD(LX-D700U)
		QMP4250-250K	POWER CORD(LX-D700E)
		BHF0046	POWER CORD(LX-D700EK)
	7	BHE0227	AV CABLE
	8	BHE0237	ADAPTER(13)
	9	BHE0238	ADAPTER(16)
	10	BHE0239	ADAPTER(19)
	11	BHE0061	D.SUB CABLE
	12	BHE0229	PC AUDIO CABLE
	13	BHE0232	M.S CABLE(MAC)
	14	BHE0233	M.S CABLE(DOSV)
	15	BHQ30121-5	PACKING CASE(LX-D700U)
		BHQ30121-4	PACKING CASE(LX-D700E/EK)
	16	BHD0060-1-1	CUSHION(UPPER)
	17	BHD0062-1-1	CUSHION(LOWER)
	18	BHD0061	ACCESSORY CASE
	19	BHQ30126	SHEET
	20	LC30450-001A	CARTON LABEL (LX-D700U)
		LC30451-001A	CARTON LABEL (LX-D700E/EK)

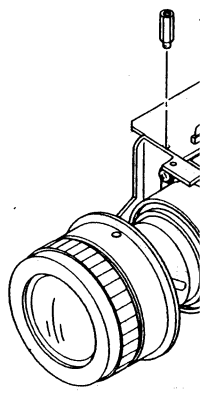
FINAL ASSEMBLY <M2>

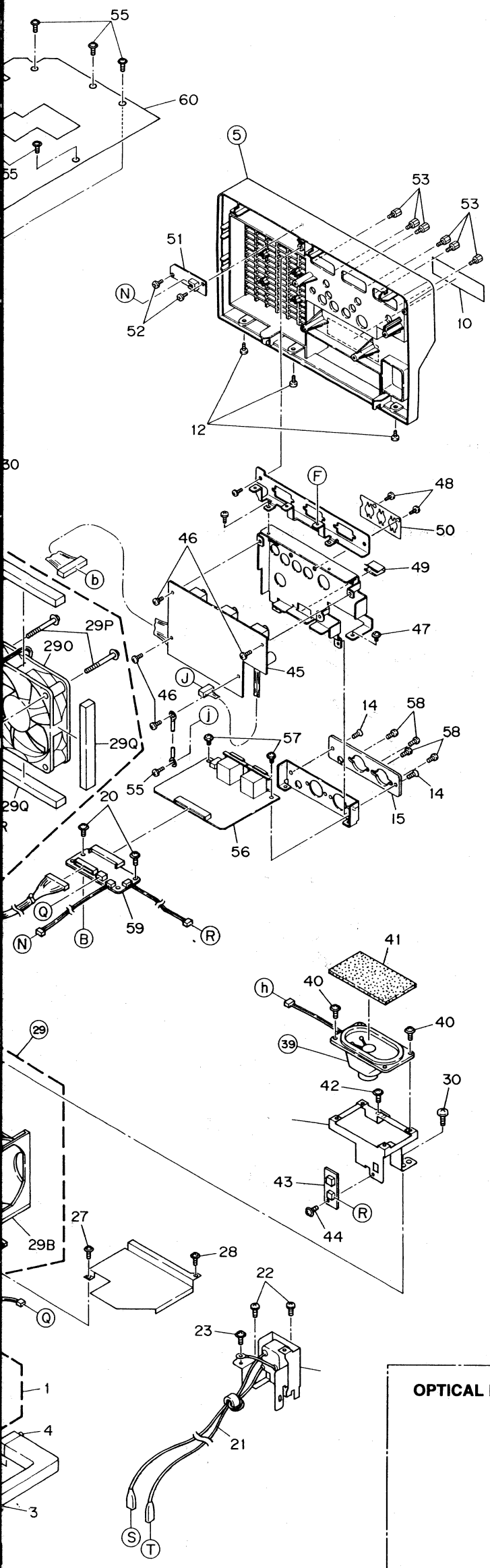
BEWARE OF BOGUS PARTS

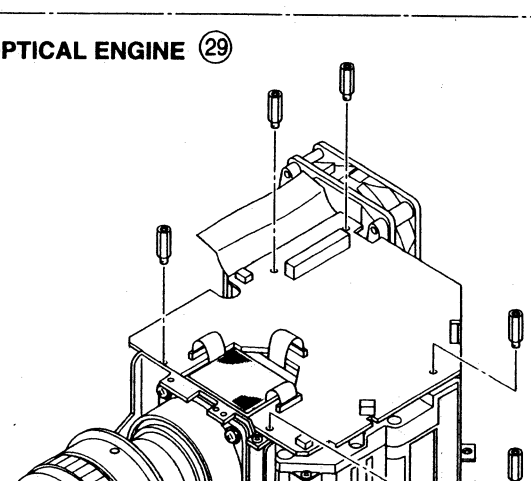
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



OPTICAL ENGINE





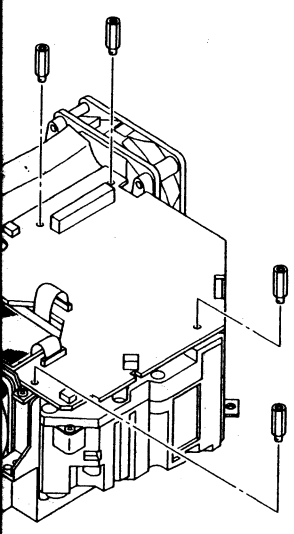


OPTICAL ENGINE (29)

⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION

FINAL ASSEMBLY <M2>

	1	BHQ20046G	B.CHASSIS ASS'Y(LX-D700U)
		BHQ20046H	B.CHASSIS ASS'Y(LX-D700E/EK)
	1A	BHQ30108	FOOT F
	1B	BHQ40041-3	FOOT (LOWER)
	1C	BHQ40163-2	BOLT FOOT
	1D	NTS8000M	NUT
	1E	BHM30005-2	SPACER
	1F	BHQ30109	FOOT REAR
	1G	BHQ40041-3	FOOT(LOWER)
	1H	BHQ40163	BOLT FOOT
	1I	NTS5000M	NUT
	1J	BHM30005-3	SPACER(FOOT.R)
	1K	BHD0056	FILTER C. ASS'Y
	1L	BHE0225	MECHANICAL SW
	2	BHQ20048A	COVER L. ASS'Y
	2A	BHQ40041-3	FOOT(LOWER)
	3	BHQ20043-1-3	HANDOL
	4	BHQ40162	SHAFT ×2
	5	BHQ20047A-3	REAR P.ASS'Y
	6	BHQ20045G	TOP COVER ASS'Y(LX-D700U)
		BHQ20045H	TOP COVER ASS'Y(LX-D700E/EK)
	7	BHQ30134A	LENS CAP ASS'Y
	8	BHD0068	RIVET
	9	BHD0059	OPERATION UNIT
	10	BHQ30113-5	RATING LABEL(LX-D700U)
		BHQ30113-6	RATING LABEL(LX-D700E/EK)
	11	SDSP4006M	SCREW ×2
	12	SDSF3008M	SCREW ×3
	13	SDSF3006ZY	SCREW ×4
	14	SSSP3006M	SCREW ×2
	15	BHQ40172	PLATE(R.BOARD)
	16	BHQ30105	RING1
	17	BHQ30110	RING2
	18	BHD0063	SCREW ×2
	19	BHE0236	FFC WIRE
	20	BHNE1033703	SCREW ×2
⚠	21	BHNE2023617	AC CABLE ASS'Y
	22	BHNE1021824	SCREW ×2
	23	BHNE1033025	SCREW
⚠	24	BHNE2023618	FILTER BOARD ASS'Y A
⚠	24A	QMF51D2-6R3J1	FUSE
	25	BHNE1021824	SCREW ×4
	26	BHNE1021795	SCREW ×2
	27	BHNE1021824	SCREW
	28	BHNE1021795	SCREW
	29	–	OPTICAL ENGINE
	29A	BHNE1032094	COOLING FAN
	29B	BHNEELPLP04	LAMP INNER HOUSING
	29C	BHNE1033654	L/G SHIELD PLATE
	29D	BHNE1021795	SCREW ×2
	29E	BHNE2023438	CABLE ASS'Y G
	29F	BHNE1033691	SCREW
	29G	BHNE2023439	CABLE ASS'Y H
	29H	BHNE1033646	MINI CRAMP B
	29I	BHNE1034261	SCREW
⚠	29J	BHNE2021732	SAFETY SW
	29K	BHNE1033691	SCREW ×2
	29M	–	CABLE ASS'Y F
	29N	BHNE1039841	BOARD SPACER ×5
	29O	BHNE1032095	EXHAUST FAN
	29P	BHNE1033696	SCREW ×2



FINAL ASSEMBLY <M2>

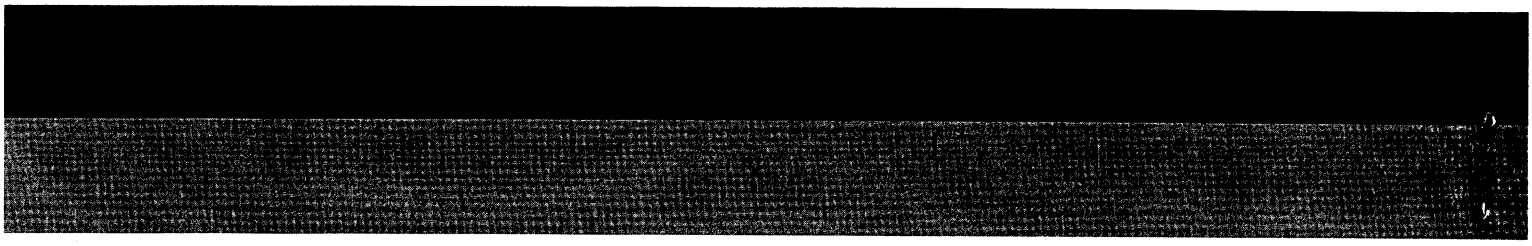
⚠	REF NO.	PART NO.	PART NAME, DESCRIPTION
	1	BHQ20046G	B.CHASSIS ASS'Y(LX-D700U)
		BHQ20046H	B.CHASSIS ASS'Y(LX-D700E/EK)
	1A	BHQ30108	FOOT F
	1B	BHQ40041-3	FOOT (LOWER)
	1C	BHQ40163-2	BOLT FOOT
	1D	NTS8000M	NUT
	1E	BHM30005-2	SPACER
	1F	BHQ30109	FOOT REAR
	1G	BHQ40041-3	FOOT(LOWER)
	1H	BHQ40163	BOLT FOOT
	1I	NTS5000M	NUT
	1J	BHM30005-3	SPACER(FOOT.R)
	1K	BHD0056	FILTER C. ASS'Y
	1L	BHE0225	MECHANICAL SW
	2	BHQ20048A	COVER L. ASS'Y
	2A	BHQ40041-3	FOOT(LOWER)
	3	BHQ20043-1-3	HANDOL
	4	BHQ40162	SHAFT ×2
	5	BHQ20047A-3	REAR P.ASS'Y
	6	BHQ20045G	TOP COVER ASS'Y(LX-D700U)
		BHQ20045H	TOP COVER ASS'Y(LX-D700E/EK)
	7	BHQ30134A	LENS CAP ASS'Y
	8	BHD0068	RIVET
	9	BHD0059	OPERATION UNIT
	10	BHQ30113-5	RATING LABEL(LX-D700U)
		BHQ30113-6	RATING LABEL(LX-D700E/EK)
	11	SDSP4006M	SCREW ×2
	12	SDSF3008M	SCREW ×3
	13	SDSF3006ZY	SCREW ×4
	14	SSSP3006M	SCREW ×2
	15	BHQ40172	PLATE(R.BOARD)
	16	BHQ30105	RING1
	17	BHQ30110	RING2
	18	BHD0063	SCREW ×2
	19	BHE0236	FFC WIRE
	20	BHNE1033703	SCREW ×2
⚠	21	BHNE2023617	AC CABLE ASS'Y
	22	BHNE1021824	SCREW ×2
	23	BHNE1033025	SCREW
⚠	24	BHNE2023618	FILTER BOARD ASS'Y A
⚠	24A	QMF51D2-6R3J1	FUSE
	25	BHNE1021824	SCREW ×4
	26	BHNE1021795	SCREW ×2
	27	BHNE1021824	SCREW
	28	BHNE1021795	SCREW
	29	–	OPTICAL ENGINE
	29A	BHNE1032094	COOLING FAN
	29B	BHNEELPLP04	LAMP INNER HOUSING
	29C	BHNE1033654	L/G SHIELD PLATE
	29D	BHNE1021795	SCREW ×2
	29E	BHNE2023438	CABLE ASS'Y G
	29F	BHNE1033691	SCREW
	29G	BHNE2023439	CABLE ASS'Y H
	29H	BHNE1033646	MINI CRAMP B
	29I	BHNE1034261	SCREW
⚠	29J	BHNE2021732	SAFETY SW
	29K	BHNE1033691	SCREW ×2
	29M	–	CABLE ASS'Y F
	29N	BHNE1039841	BOARD SPACER ×5
	29O	BHNE1032095	EXHAUST FAN
	29P	BHNE1033696	SCREW ×2
	29Q	BHNE1034258	EXHAUST FAN CUSHION ×4
	29R	–	EXHAUST MESH A
	29S	BHNE1032312	SUPPOTER
	30	BHNE1033704	SCREW ×4
⚠	31	BHNE2027279	POWER SUPPLY BLOCK
	31A	BHNE2023192	SPEAKER
	31B	BHNE1021795	SCREW×2
	31C	BHNE1034025	SPEAKER CUSHION
	32	BHNE1021824	SCREW×4
	33	BHNE1033692	SCREW
	34	BHNE2023440	CABLE ASS'Y I
	35	BHNE1033646	MINI CRAMP B
	36	BHNE1034261	SCREW
	37	–	CASE HOLD PLATE
	38	BHNE1021795	SCREW ×2
	39	BHNE2023192	SPEAKER
	40	BHNE1021795	SCREW ×2
	41	BHNE1034025	SPEAKER CUSHION
	42	BHNE1021795	SCREW
	43	BHNE3001779	RECEPTOR BOARD ASS'Y A
	44	BHNE1021795	SCREW
	45	BHNE3002284	AUDIO BOARD ASS'Y
	46	BHNE1021824	SCREW×4
	47	BHNE1021795	SCREW
	48	BHNE1021824	SCREW ×2
	49	BHNE1032367	A. BOARD RADIATION SPRING
	50	BHNE1033583	RCA JACK CONDUCTION PLATE
	51	BHNE3002151	RECEPTOR BOARD ASS'Y B
	52	BHNE1033703	SCREW ×2
	53	BHNE1032134	SCREW ×6
	54	BHNE3003178	MAIN BOARD ASS'Y
	55	BHNE1021795	SCREW ×9
	56	BHNE3002279	REMOTE BOARD ASS'Y
	57	BHNE1021795	SCREW ×2
	58	BHNE1034713	SCREW ×4
	59	BHNE2024028	C.BOARD CABLE ASS'Y
	60	BHNE1039706	SHIELD PLATE

–DRIVER BOARD ASSEMBLY–

F250	BHNE3000696	FUSE
F251	BHNE3000696	FUSE
F252	BHNE7610627	FUSE

–OPTICAL ENGINE SHIPPING CASE–

1	BHNE5006064	SHIPPING CASE
2	BHNE5005880	CUSHION(UPPER)
3	BHNE5005881	CUSHION(LOWER)
4	BHNE5005741	POLY BAG



JVC

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